Occupational HAZARDS

THERE'S PROFIT IN PREVENTION

ECEMBER
1948

ROUTE TO
OUR PLANT
E PROTECTION
EN: ARTICLES
ON FIRE
PROTECTION
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IN THIS ISSUE:

CONTROLLING SILICOSIS
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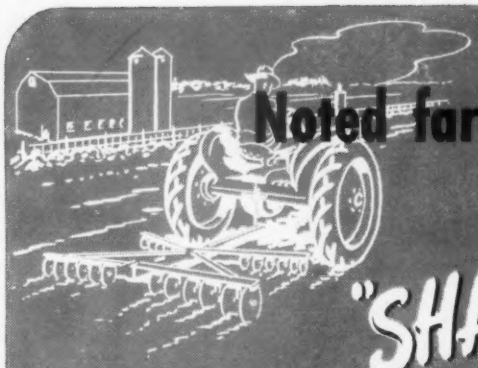
COLOR AND SAFETY



Noted farm equipment manufacturer "SHAKES" DUST PROBLEM!

"SHAKE-OUTS" EQUIPPED WITH KIRK & BLUM DUST CONTROL SYSTEM . . .

Shake-outs have long been the dustiest, dirtiest section of a foundry. Not so in this modern plant. Kirk & Blum installed these efficient "over-and-under" hoods which collect dust as it is released in the shake-out operation. In the photo above, six of the shake-out stations are seen. Piping is designed to meet AFA standards; note the cleanout doors and gasketed companion angle connections.

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[1] EGYPTIAN ART—By Sir Gaston Maspero Hon. K. C. M. G., Hon. D. C. L., and Fellow of Queen's College, Oxford

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There is Nothing Finer For All General Occupational Skin Cleansing

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Occupational HAZARDS

VOLUME 11 • No. 2

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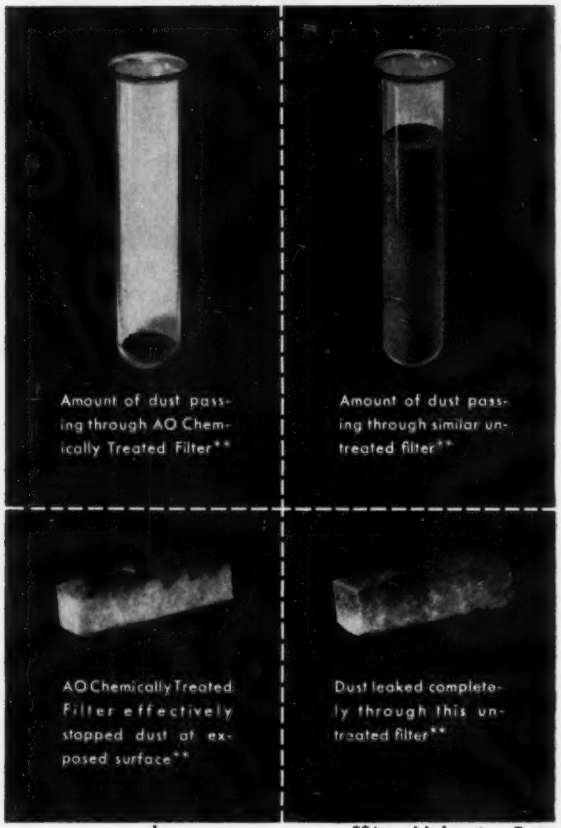
Acclaimed as One of the Greatest Advances in Respiratory Protection in Years . . . the Proof . . . More and More Repeat Orders!


Amount of dust passing through AO Chemically Treated Filter**
Amount of dust passing through similar untreated filter**
AO Chemically Treated Filter effectively stopped dust at exposed surface**
Dust leaked completely through this untreated filter**

**Actual Laboratory Tests

New AO* R-2000 RESPIRATOR with Chemically Treated Filter

It is easy to understand the popularity of this new AO Respirator because *each of its advantages leads to another!* Chemical treatment of the filter provides far greater filter efficiency, hence a far smaller filter (only five inches approximately) is possible. Therefore, a smaller filter container can be used which results in greatly superior wearer comfort and improved front and side vision.

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*Approved by the Bureau of Mines.

Read these Dramatic FEATURES!

- Protects against dusts 24 millionths of an inch in diameter
- Filter does the job of similar untreated filters 8 times as large
- Chemical treatment of this filter increased its efficiency over 40 times
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American Optical COMPANY *Safety Division*

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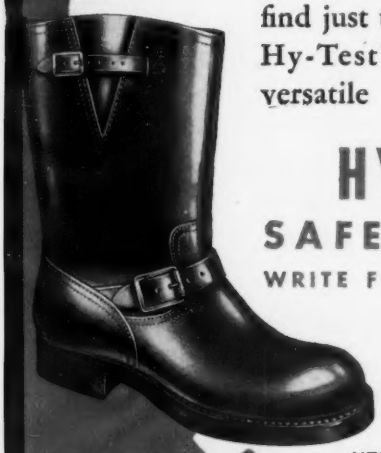
SAFETY SHOES
WRITE FOR FREE CATALOG

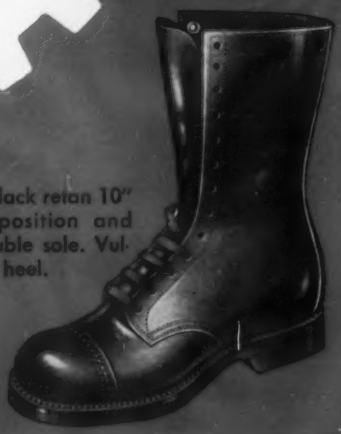
H753-5—Men's russet glove 8" blucher. Leather full double sole. Leather heel, brass nailed.



H755-1—Men's chocolate rosite 8" blucher. Weatherwear and leather full double sole. Leather heel, brass nailed.

H799-1 — Black stormite 10" pull-on boot, Neocord sole and heel.

H691—Men's russet retan 10" blucher. Composition and leather full double sole. Whole rubber heel.



H756—Men's black retan 10" blucher. Composition and leather full double sole. Vulcanized rubber heel.

...Insure Worker's Feet in Sure Protection

Give your workers HY-TEST SAFETY SHOES For Christmas

WRITE FOR COMPLETE DETAILS

with HY-TEST ANCHOR FLANGE *Safety Shoes*

THE WORLD'S LARGEST SELLING SAFETY SHOE

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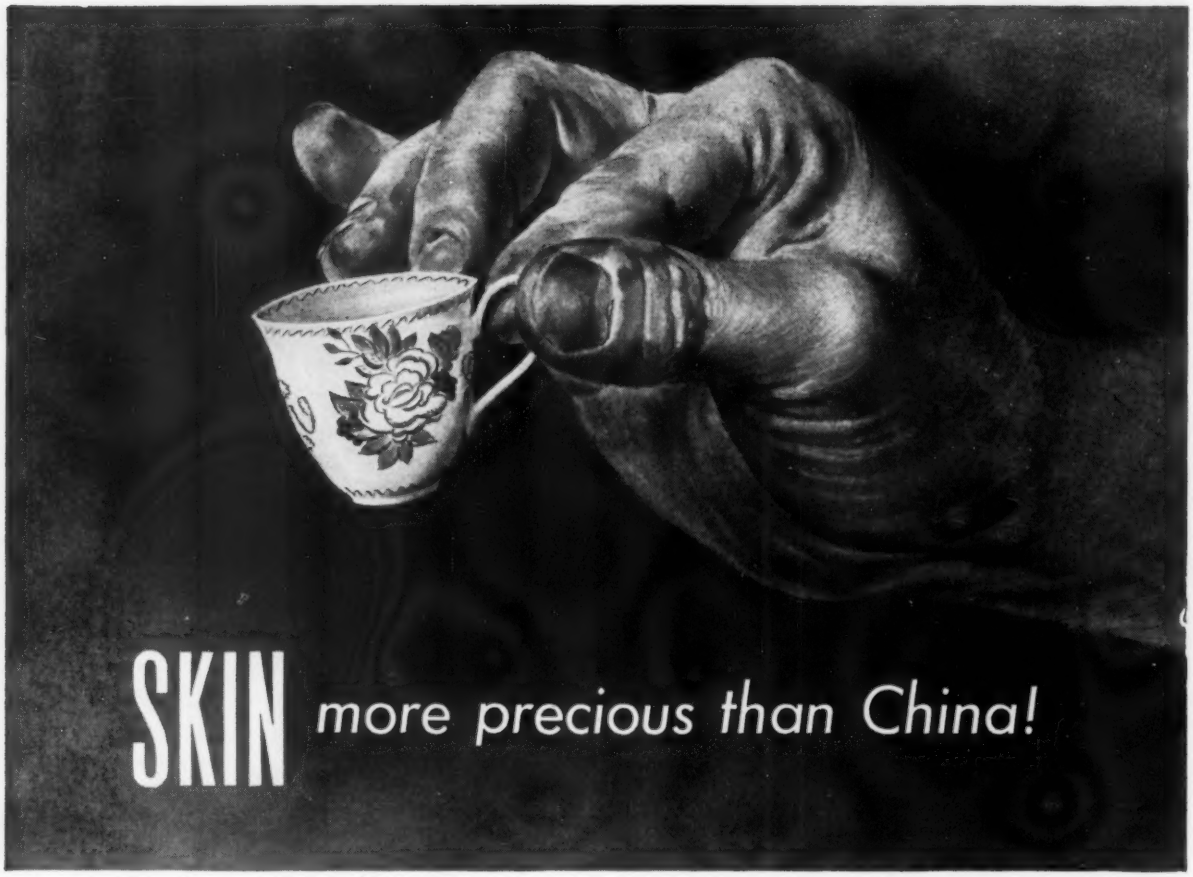

They're more precious to industry than all the china in the universe. But like china, workers' hands are readily vulnerable to damage. Skin-injuring industrial operations and chemical irritants in your plant see to *that!*

While you can't always avoid exposure to these dangers, you *can* help safeguard skin against the ailments caused by them. Simply have your workers gently rub the proper West Protective Cream on their skin before they start work. Thus, they are assured of *safe, smooth, lasting protection.*

Since they are scientifically prepared, industry everywhere finds West Protective Creams effective precautions against nearly every dermatitis hazard that comes to mind. These creams come in six different types—and either penetrate the skin or remain on the surface—according to the special type of protection required.

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Send for Free Chart

PRODUCTS THAT PROMOTE SANITATION

WEST DISINFECTING Company

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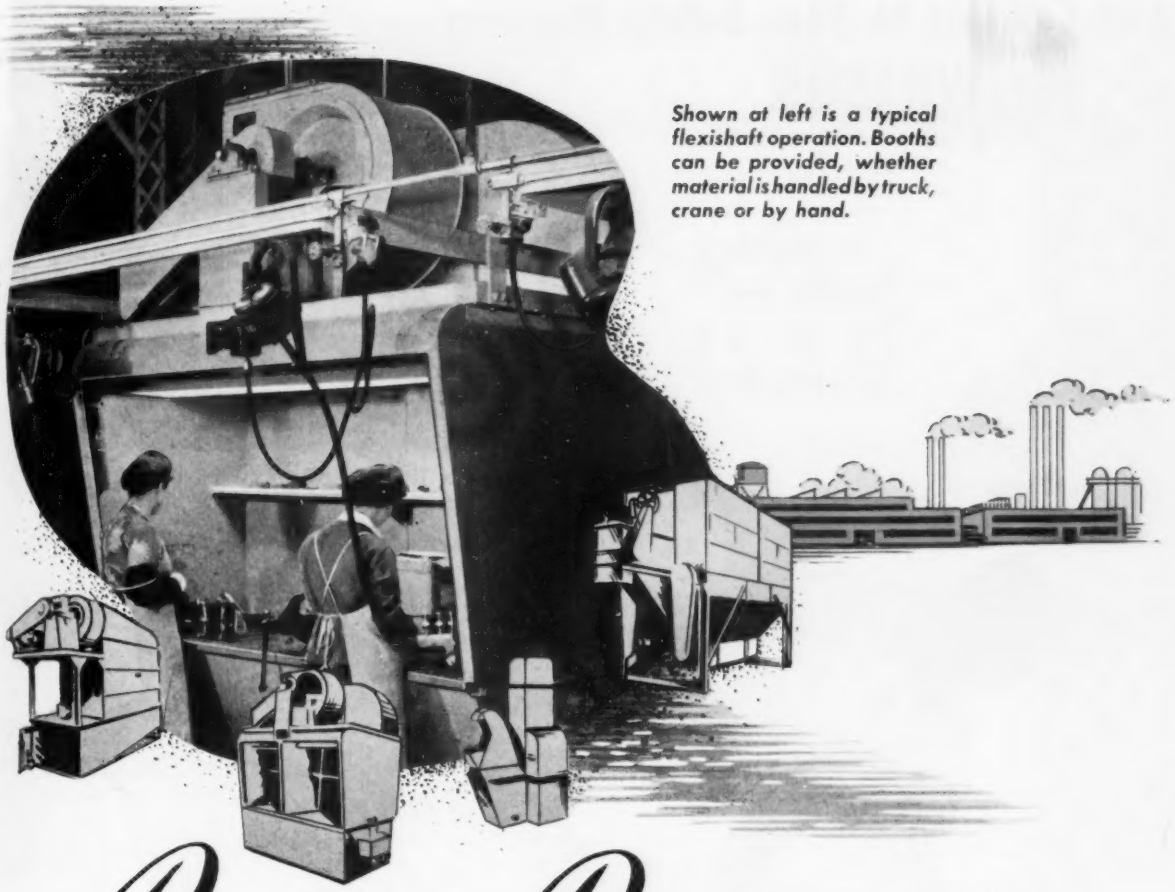

Shown at left is a typical flexishaft operation. Booths can be provided, whether material is handled by truck, crane or by hand.

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from HARMFUL DUSTS *and* FUMES!

As a PIONEER in the development and improvement of standard methods of *safely* collecting DUST and harmful FUMES, Peters-Dalton is *fully equipped* to handle whatever problem, small or great, you may confront.

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see our CATALOG in SWEET'S FILE MECHANICAL INDUSTRIES

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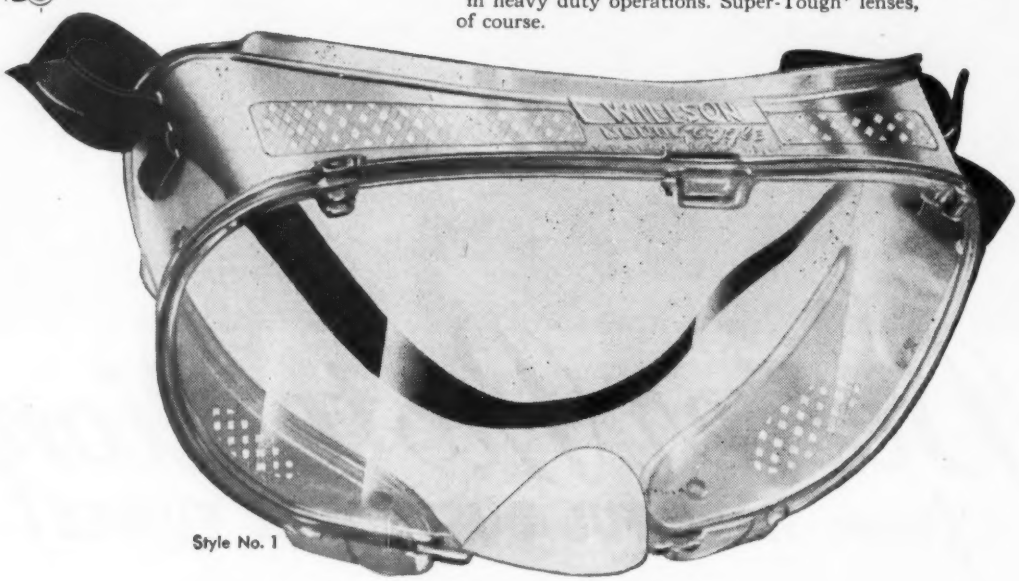
Style F350

COMFORT IS IN THE SADDLE . . . With this broad saddle nose bridge, there's less fatigue in wearing these goggles over long periods of time in heavy duty operations. Super-Tough* lenses, of course.


Style No. 1

AN OUNCE AND A QUARTER OF PREVENTION . . . Lightweight, form fitting MONOGoggle can be worn all day with comfort. Tru-Hue green or clear plastic full vision interchangeable lens has high impact strength.

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THIS LIGHTWEIGHT TAKES ON ALL DUSTS . . . Large throw-away filter and flexible molded face piece assure easy breathing and comfortable, snug, face fit. U. S. Bureau of Mines Approved.

For complete information on these products and their application, as well as many more eye and respiratory protective devices, get in touch with your nearest Willson distributor or write us direct.

GOGGLES • RESPIRATORS • GAS MASKS • HELMETS

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PRODUCTS, INCORPORATED

READING, PA., U.S.A. *Established 1870*

209 WASHINGTON STREET, READING, PA., U. S. A.

ELEVATOR HAZARD SIGNS

CAUTION
GATE MUST BE DOWN WHEN ELEVATOR IS UP
SAFETY FIRST
DONT RIDE ON THIS ELEVATOR
IT IS FOR FREIGHT ONLY
CAUTION
BE SURE ELEVATOR IS LOCKED WHEN LOADING AND UNLOADING
NOTICE
THIS GATE MUST BE CLOSED BEFORE THE ELEVATOR CAN BE OPERATED
SAFETY FIRST
RING BELL BEFORE STARTING ELEVATOR

Look Out!

GOING up, or coming down, or even standing still, Elevators have hazards all their own. Men try to jump them, or fall down shafts, or stick their heads up to look. Safeguard your workers . . . with the help of . . .

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FOR ACCIDENT PREVENTION

You'll take a long step toward preventing "Crushed by the elevator" being written opposite an employee's name.

Numerous **ELEVATOR HAZARD SIGNS** are shown in Stonehouse Catalog No. 8. It's free on request.

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"Signs Since 1863"

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WOULDN'T YOU LIKE TO BE ABLE TO TELL YOUR BOSS HOW TO...

Reduce Accidents

Increase Production

Improve Quality

Reduce Training Time and Labor Turnover

Cut Down Waste and Spoilage

Increase Workers' Earnings

?

THERE is no catch! That list of advantages, impressive and difficult of achievement as it appears, is the proved record in dozens of plants in which has been installed the Bausch & Lomb Industrial Vision Service. Based on more than eight years of intensive scientific research, the Industrial Vision Service classifies workers on their *visual skills,* determines visual standards for every job, and identifies those who are most likely to benefit from professional service for vision. The result is safer, more efficient operation of your plant. Wouldn't you like to be the one to get it all started in your company?

BAUSCH & LOMB

OPTICAL COMPANY B&L ROCHESTER 2, N.Y.

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Industrial Vision Department
Baush & Lomb Optical Co.
745-Y St. Paul St., Rochester 2, N. Y.
Please send me a copy of "Vision in Industry" and details of the Bausch & Lomb Industrial Vision Service.

NAME.....

TITLE.....

COMPANY.....

STREET.....

CITY..... STATE.....

Let's Be Selfish

Regardless of what your politics are, you will probably join with the rest of America and agree that Mr. Dewey's surprise defeat was due to overconfidence. His advisers, the polls of public opinion, the newspapers and all the rest of the experts gave Mr. Dewey the election before he won it. He was lulled into complaisence by these false prophets and lost the presidency. He took too much for granted.

As a people, we take too much for granted the blessings of our country. It should scare the pants off us when Communists can take into their camp a man who should be one of our nation's leaders, or when Communists can actually place their members in high governmental places, or when Communists can get some of our government officials to carry on their nefarious work for them. It is time for us to wake up and look around.

It is time that we become suspicious of organizations with high-sounding patriotic names. We are so childish we think that any organization with a fine name really means to live up to it. We are not used to the man who offers us the millenium. We think he can actually deliver it to us. Let's be suspicious. Let's be selfish. Let's not be taken in by honeyed words.

What do these people offer us? Freedom. We have more freedom than their beloved Russia ever knew about in its whole history. They know only the police state. They don't even begin to understand our kind of freedom, which arises from the dignity of the individual. They don't understand the kind of freedom which permits a man to work where he pleases and quit the place if he pleases. They don't understand what it means for us to be able to say and do anything that pops into our heads, singly or collectively. They don't understand what it is to be able to worship as we choose, to live where and as we want, to go and come as we want with no interference from the State.

They want to give US freedom? Bunk. We could give them plenty of ours and still have some left over.

What else do these people offer us? Democracy. It's sand in your eyes. They don't know what Democracy is. They know the police state. They know the one-party ballot. Vote their way—or off comes your head. They never saw a Mr. Truman and Mr. Dewey run for our highest office, have only a couple of million votes separate them, and then see this country unite behind the winner to make America function just as though their very own candidate had won. They don't understand this.

They say we are weak and decadent. They don't know that our strength comes fom our people. Their strength comes from a government centered in the hands of a few. Ours comes from the 150 millions of people who ARE America.

These are things we must treat selfishly. Let's not lose our birthrights. Let's keep these things. Let's not allow anyone to take them away. Let's guard them as we would our most valuable possession, because that's what they are.

Let's be selfish. Without these rights to freedom, our families, our work, our money, our jobs, our houses and all our possessions amount to nothing. With them, we Americans are the blessed people of the earth.

Irving B. Hexter

From the Executive

THE EXECUTIVE'S RELATION TO AND WITH THE SAFETY DEPARTMENT

By RAYMOND H. ULRICH,
Vice President Southern Natural Gas Co.
Birmingham, Alabama

THOSE industrial enterprises which have established low accident frequencies and whose loss from accident has been kept low have not reached this enviable status by accident. It has been attained by the same objectivity and good management which has, in most instances, made these same concerns outstandingly successful in their fields.

Good management recognizes the "Principle of the Objective" and no activity is undertaken except by plan and intent to contribute to the objective of the enterprise. Toward the attainment of the objective, policy formulation is an important function, for policies provide guides and standards. It is the responsibility of top executives to formulate, establish and publish policy.

For many years it has been accepted in well managed industrial enterprises that an important policy which materially affects efficiency of operation concerns the control of accidents. Such a policy is frequently expressed in some such wording as "it is the policy of this company that every operation shall be done in a safe way and without accident". Another statement of the same policy is "maximum productivity shall be obtained without injury to any employee." Thus consideration of the control of accidents should start at the top, and policy dealing with it signifies an acceptance of social responsibility for the safety of people as well as a knowledge of the economics governing the successful operation of industry.

Having established accident control as a policy of the company a safety department follows logically as instrumentation. Inasmuch as the purpose of most industrial organizations is the manufacture or distribution of a product, a safety department is, in relation to the rest of the organization, a service department, not an operative department. It should be designed to assist in obtaining the kind of accident control contemplated in the established policy. The safety department, not being in the line, should not have line authority with respect to the operating departments. It is the duty of the operating departments to operate safely and their responsibility extends up the line to the top. The function of the safety department is to advise the operating departments how to prevent accidents. Therefore the safety department should be in

To the Safety Department

To the Operating Department

staff relationship reporting to an executive of top rank. The authority of the safety department is that of staff, that is—the authority of knowledge.

The safety department should be headed by an individual fitted by personality, knowledge and experience to lead the thinking on the subject of accident control. The nearer to a professional attitude that the people in the safety department display, the more successful will be their influence on accident prevention. The executive should require that the safety department analyze the operations of the risk and reveal the hazards to the operating departments involved. The executive has the right to expect that the safety department will make valuable suggestions and recommendations for the control of these hazards. Furthermore, the safety director should be capable of analyzing new situations and assist the operating department involved to devise practices and mechanical devices to control new and unusual hazards. In short, the safety department does not prevent accidents but it has the responsibility of showing the operating departments how to do that.

Similarly the safety department guides the recording of accident data as control media. The investigation of accidents and the calculation of accident frequency and severity provide gages on the ability of operating departments to work without accident. It is a fact that industry has learned that good accident records are one measure of the well run plant. Again I say that it is a well founded fact that the plant operating with few accidents is a productive plant.

The executive expects his safety department to keep him informed. He expects his safety department to keep his operating departments informed. He believes that a properly qualified safety director operating under a policy in which all department heads and foremen know that top management expects safe operation, will be called upon to solve the many problems presented in the field of safety. If the safety director is wise and practical in his advice and friendly in his giving it he will be welcomed by the operating departments. The safety director and other members of the safety department must present their information so that the benefits to the people involved are clearly revealed. In most instances this approach by the qualified safety director should obtain complete cooperation. In the instance, however, in which the line refuses to give credence to the staff safety department the executive naturally has a function to perform to establish proper relationships between the parties involved.

The executive may be unfamiliar with the principles of accident prevention, and he usually has little time to devote to this specialty. Thus his relation to the safety department is that of delegation of certain duties. He cannot delegate his responsibility. The success with which the safety department discharges these duties determines the quality of success of the executive in carrying out his responsibility, that of keeping his employees free from needless pain and suffering and that of obtaining for his stockholders a standard of productivity unmarred by loss from accidents.

Briefly summarized Mr. Ulrich presents in conclusion what he thought were the three essential objectives, namely:

1. The practice of Safety is *modern and popular.*
2. Do not hesitate to appropriate reasonable amounts of money to reach an objective.
3. From a humane point of view, insist and practice a practical cooperation in safety work, so that you will be able to return your working associates to their homes upon completion of the day's work in the same general physical condition as when they reported to you for work.

(The editor of this magazine wishes to thank the American Mutual Liability Insurance Company for its cooperation in presenting this article to the readers of Occupational Hazards).

An Important New Incentive Tool for Eye Safety in industry . . .

WISE OWL CLUBS OF AMERICA

HE Wise Owl Club is a peace-time version of the famous Caterpillar Club of the U. S. and British Air Forces. Only fliers who had saved their lives by jumping from a plane and coming down by parachute could become members of the Caterpillar Club. The Wise Owl Club admits only men and women who have been saved from blindness in an accident because they were wearing safety goggles. Many thousands of eyes are damaged each year in industrial accidents. Many of these could have been saved if the worker had been wearing a modern pair of safety goggles with specially hardened lenses. Such lenses can withstand even a direct hit from a flying rivet, striking with such force that the wearer is knocked down, without shattering and cutting the eye. Many firms, however, still have no properly organized program to provide safety goggles for their employees. Many workers still object to wearing safety goggles. They say, "It can't happen to me!" To the firms and the workers with the backward outlook on this subject the Golden Owl with the green goggles, the symbol of the Wise Owl Club, comes along to persuade them to be more sensible before it is too late.

How the idea of the Wise Owl Club was born is a truly American story of three-way cooperation between labor, management and one of the great non-profit health agencies of the United States—an example of "The American Way" in practice. It all started in the midwestern metal foundry of a great industrial plant that makes heavy railroad freight cars. After the castings are taken from the molds, they are passed to the grinding shed, where the high-speed grinding wheels clean off and smooth the rough edges. One of these machines was controlled by Joseph Folks, a skilled grinder employed for the past 17 years in the St. Louis plant of American Car and Foundry Company. Folks got the shock of his life one day about a year ago when a jagged twisting chip of hot metal flew off from one of the castings he was grinding and struck full into his safety goggle lens. Folks was thrown backwards by the force of the impact and his safety lens was left a mass of cracks—but it did not shatter and Folks' eye was unscratched.

Folks took time out to rest up from the shock. He thought things over and remembered during the war some talks he had with Air Corps pilots. They had told him about the Caterpillar Club. That flash of memory gave Joe Folks his idea. He wrote a letter to the editor of the company magazine saying that he wondered how many other men there were in the company as lucky as he—and suggesting that they form a club and wear a badge like the gold caterpillar.

American Car and Foundry Company's management in New York recognized at once that here was a great psychological idea—an "incentive tool"—to make the men *want* to wear their safety goggles. The company's safety director, F. H. Humphreys, and the public relations department, drew up the rules for one of the most exclusive clubs in the world, designed a badge—an owl wearing safety goggles—and chose the name, "The Wise Owl Club."

(Please turn to page 42)

PROVED AND APPROVED

New CESCO CUP-TYPE GOGGLES

FEATURING... *The COMFORT-KING Headband—holds goggles firmly with 30% less tension. Made of round molded rubber—will not kink, curl or twist. No buckles or sharp edges. Instant adjustment to any head size.*

CESCO Chippers Goggles • Number 545-C, with brown thermoplastic cups, shown above. Well ventilated and equipped with 50 mm Super-Safety Lenses.

Job-Tested and Worker-Endorsed where constant use is required

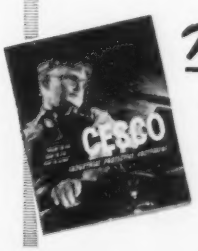
CESCO Chippers Goggles • Number 545-T, with transparent cups. Well ventilated, equipped with 50 mm Super-Safety Lenses.

• CESCO's new development in cup-type goggles increases wearer comfort and assures greater worker safety. These CESCO goggles have the "feel" of lightweight goggles, yet give all the protection good cup-type goggles must provide.

CESCO goggle cups are engineered to fit both left and right eye areas snugly, yet gently. Broad contact surfaces and correct balance eliminate pressure spots. COMFORT-KING Headbands provide the right firmness to hold the goggles comfortably in correct position.

If your workers are not yet wearing the new CESCO Cup-Type Goggles, order them now. Use will prove their advantages to you.

CESCO Welders Goggles • Number 545-W, with 50 mm Cescoweld and cover lenses.



New CESCO CATALOG

Tells you where to use, how to use, and how to select industrial protective equipment. Be sure to have this safety guide. Write for your copy.

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The silicosis danger is not confined to the mines alone. and silicon dust is only one of many industrial hazards to employee health and production efficiency. How are conditions in your plant?

INTO THE FIGHT TO CONTROL COSTLY SILICOSIS

By J. S. HUTNER

THERE is little doubt that man-made dusts have become a major industrial health hazard and production problem. Physiologically designed to cope with the dust particles normally present in the air we breathe, the lungs of the industrial worker have now to contend with and attempt to nullify the effects of numerous chemical and mineral dusts as well. For instance, it is estimated unofficially, on a conservative basis, that one million or more persons are annually exposed to the inhalation of potentially dangerous concentrations of silica-bearing dusts, in the United States and Canada.

The recent political fight in Canada made Silicosis a national topic there. In this article the prevention of Silicosis is used as an example of how industrial health hazards inevitably involve production practice with the public interest.

Expensive Neglect

It is regrettable that the general physical and mental health factors of persons employed in industry as a whole are so sadly neglected by most production men. The sooner management realizes that protective health measures in industry are a MUST—as vitally important to increased production and reduced overhead as general engineering, planning, and maintenance—the sooner employer - employee relations be cemented and placed on a more even keel. Troubled by domestic problems, cramped working conditions, stifling heat, unnecessary noises, harmful dusts and fumes, poor material flow, faulty inspection, one can't expect an employee to attain peak efficiency.

Pneumoconiosis is the general medical term applied to all forms of lung disease arising from the inhalation of dusts. It is induced by prolonged exposure over a number of years to the inhalation of dust particles such as silica. Generally speaking, however, a person who

An X-ray view of the normal healthy lung.

has acquired pneumoconiosis does not necessarily suffer harmful effects for it is entirely dependent upon the type of dust which he has been inhaling as to whether scarring of the lung substance or tissue will ensue. Silicosis, on the other hand, is a term specifically applied to lung affections induced by prolonged inhalation of dusts composed partly or wholly of free silica and may prove quite serious.

A Chief Industrial Concern

In silicosis, tiny particles of silica dust on entering the lungs, which are unable to eject or absorb it, become encysted by the fibrous material of the lungs termed fribrin thus preventing damage to the surrounding cells. However, eventually many cells are affected until a portion of the lung becomes useless.

Silicosis has long been considered by many to be one of the oldest known occupational diseases and is of chief industrial and medical concern. It has developed in as short a period as two years in an industry such as sand-blasting, where the concentration of dust is high; or it may take as long as twenty or even thirty years to show itself in a foundry worker. It is wholly dependent upon the nature of the dust particles, their respirable size and concentration, the general working conditions and the employee's own personal health and immunity. In general, however, it is conceded that silicosis is a serious disease, for the resistance to infection becomes lessened and the person becomes more readily susceptible to tuberculosis.

The Invisible Danger

It is estimated that sixty per cent of the earth's crust is composed of silica compounds. Quartz and flint as found in gold mining are practically pure silica, granite is approximately one-third silica content and other rocks and sands contain it in varying degrees. Exposure to silica dusts occur in such industries as hard rock mining, sand-blasting, granite-cutting, and quarrying: moulding, and grinding with sandstone. However, the percentage of free silica present in the atmosphere of a particular industry does not necessarily correspond to the percentage of silica in the material worked.

Silica dust present in the air must be of a certain smallness before it can enter the lungs. Particles of dust large enough to be seen by the naked eye are unimportant. Those particles of silica which can cause Silicosis are less than 3 to 5 microns in size; a micron being a unit of measurement equal to 1/25,000 of an inch.

The absence of visible dust in the atmosphere does not necessarily indicate the absence of harmful dust present in an industry. The operation may produce fine dust only, or the visible dust may have settled due to its larger size, thus leaving only the invisible but harmful dust suspended in the air.

Inhalation of siliceous dusts may result in silicosis if the following three conditions prevail during the period of employment:

(1) The dust inhaled must be of respirable size, under 3 to 5 microns in size.

(2) The dust must be in the atmosphere at a level with the worker, in concentrations of five million or more particles per cubic foot of air. (Recent opinion has it that a count of over two million might be considered as dangerous).

(3) The dust must be regularly inhaled for a number of years.

(Please turn to page 43)

Here is the silicotic lung, proof of insufficient dust control somewhere.

The Selective Sequence Electronic Calculator is housed in a specially designed room. In rear center is the tape memory section of the mathematical marvel. The entire machine is protected by an automatic carbon dioxide gas fire extinguishing system.

IBM ELECTRONIC BRAIN HAS 24-HOUR FIRE PROTECTION

FIRE PROTECTION FOR INDUSTRY SECTION

by NORMAN ODELL

THE IBM Selective Sequence Electronic Calculator, recently dedicated to the world of science, is the closest approach yet to a machine that works like the brain. It makes possible arithmetical calculations which man has heretofore been afraid to tackle, and reduces to minutes vast calculating procedures that once taxed man's ingenuity and perseverance to the utmost.

Combining for the first time electronic speed, great memory capacity, and highly flexible programming (sequencing), the huge calculator occupies a specially designed room, 100 by 38 feet at the International Business Machines World Headquarters in New York City. In speed and complexity it surpasses the most advanced mechanical brain yet devised. It is 250 times as fast as the first such machine built by IBM in 1944.

The electronic marvel is made available to scientists by the IBM Department of Pure Science for such Herculean computing tasks as tracing the path of a planet through space, the path of light through optical systems, or the path of cosmic rays through the earth's atmosphere. The Calculator simplifies a variety of statistical problems constantly arising in the fields of medicine, astronomy, agriculture, education and social science with an accuracy and economy of time previously unknown.

Computing speeds of the Electronic Calculator are as follows:

Addition or subtraction of 19-digit numbers in 1/3500th of a second.

Multiplication of 14-digit numbers in 1/50th of a second.

Division of 14-digit numbers in 1/30th of a second.

Intermediate calculating results are stored by punching in paper tapes at the rate of 63,000 digits a minute; intermediate and final results are printed on continuous paper forms at the rate of 24,000 digits a minute. Final results are punched in IBM cards at the rate of 16,000 digits a minute. Storage, or memory, capacity of the Calculator is 400,000 digits in tubes, relays and punched tapes.

The basic function of the machine is counting, and this operation is carried out at extremely high speed through electronic tube circuits which count rapidly-recurring electronic pulses.

There are 12,500 electronic tubes and 21,400 relays, connected by 4500 miles of wire in the room-size machine. To provide flexibility for handling unusual problems, and quick changeability on the spot by operators, the "brain" has 40,000 variable plug connections.

Electrical power of 180 kilowatts is supplied to the machine, rectified from alternating to direct current by a battery of rectifier tubes housed in cabinets in a room beneath the Calculator.

When the revolutionary machine —developed and tested at IBM's Engineering Laboratories in Endicott, New York—was brought to New York in mid-1947, and reassembled and installed, every precaution was taken to safeguard the intricate machinery against all possible hazards.

Fire Protection

Realizing that fire originating in any portion of the electronic equipment might quickly destroy a large and costly section of electronic tubes, relays, power distribution trunks, or transformer units, John Lowry Co., Inc., constructors of the specially designed room, built in an automatic carbon dioxide fire extinguishing system, designed for the Calculator room by Walter Kidde & Co., Inc., fire protection engineers.

In the basement of the Calculator building are thirty-two 50-pound cylinders of liquid carbon dioxide, manifolded together and arranged for simultaneous discharge of fire-killing gas. A separate bank of 50-pound cylinders protects the basement transformer room.

In the corridors behind the glass-fronted panels of sequence tubes, sequence relays, relay memory unit, meters and other electronic equipment, are 20 nozzles spaced at regular intervals along the walls and connected by piping to the carbon dioxide cylinder manifold in the basement.

Also located in the U-shaped backstage corridor area are 29 strategically placed thermostats for fire detection, so arranged that by means of a common selector switch, either automatic or manual operation of the extinguishing system may be affected.

If fire breaks out in any part of the Calculator's electrical circuits or mechanical units, the heat produced actuates these thermostats and rings an alarm, audible throughout the Calculator room and basement areas. This is a warning to personnel to evacuate the building before fire-smothering carbon dioxide is discharged to flood the entire hazard area.

Pressure operated trips then close all doors leading off the corridors, and shut off all electronic and air conditioning equipment. The area is thus sealed against outside oxygen supply.

Once the area is emptied and sealed, control valves of the basement cylinder manifold open and carbon dioxide, stored as a liquid under 850 pounds per square inch pressure, rushes from the series of nozzles in the backstage corridors. When it hits the air, the carbon dioxide expands to 450 times its stored volume, permeates every nook and cranny of the protected space, and lowers the air's normal oxygen content from 21 to about 15 per cent, at which point fire cannot burn.

Although the carbon dioxide deals fire a quick death blow it has no harmful effect on the delicate electronic equipment. It is especially effective against electrical fires because it is a non-conducting extinguishing agent.

Incorporated in the carbon dioxide distribution system are three normally-closed directional valves to permit gas discharge in the proper area. Operation of these valves is accomplished by the actuating and detecting network and through any one of the seven remote control stations in the hazard area; and by means of the remote control stations alone when the system is arranged for manual operation.

Relay System

In the main room, where trained IBM personnel work with control consoles, card punchers and printers in putting the giant calculator through its lightning-like paces, there is a master relay cabinet and switch panel where the entire fire watchdog system may be changed from fully automatic to manual operation.

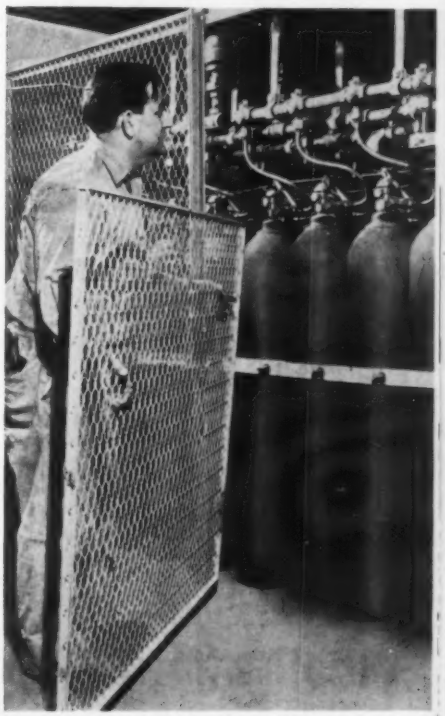
Once the system is actuated, either automatically by detectors, or manually at one of the remote control stations, the rapid sequence of operations—starting with detection of the fire and ending with extinguishment —is automatic.

Protection of the basement transformer vault operates automatically by means of a conventional rate-of-temperature rise detecting and actuating system. There are also two remote control stations, located at access doors to the transformer room, and pressure-operated switches for air conditioning cut-off and door closing.

Integration of this carefully engineered fire protection system into the building that houses the new Electronic Calculator, minimizes the possibility of fire damage to the product of many years' intensive research and a huge investment by IBM in the interests of scientific progress.

Behind the scenes at the IBM Calculator room, wall-mounted nozzles stand ready at an instant's notice to flood the corridor with fire-killing carbon dioxide gas.

In the basement of the Calculator Building is the main bank of thirty-two 50-pound cylinders of carbon dioxide—the nerve center of the automatic fire protection system.



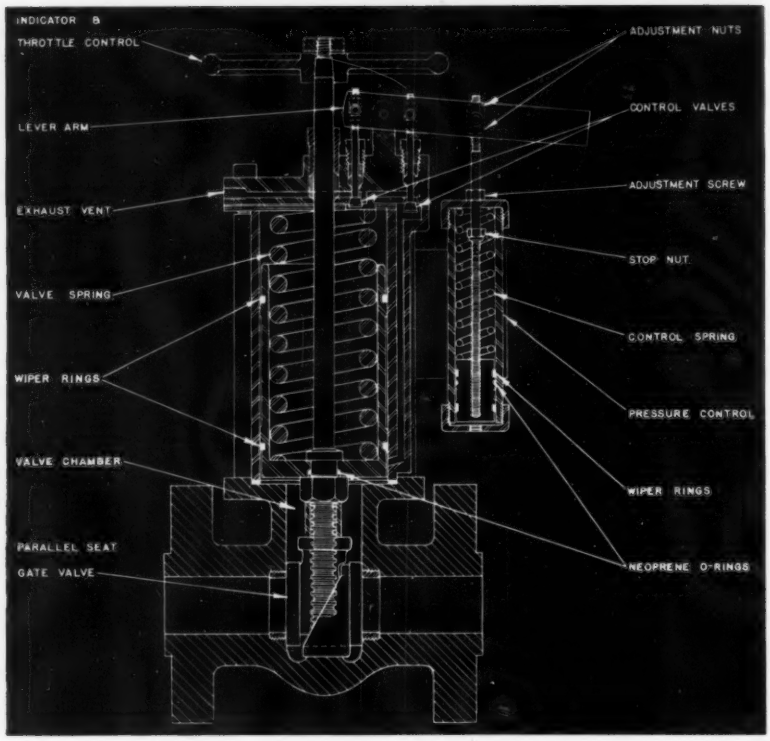


Figure 1. Many die casting plants now use, as a safety precaution, noninflammable fluids in place of the usual hydraulic oils. Such fluids are expensive and are difficult to contain in the system. Some hydraulic oil may be added to provide lubricating quality to the fluid. The use of a safety shut-off valve on the accumulator is said to eliminate much of the fire hazard without using special fluids. This diagram illustrates the construction of the new Shafer Safety Shut Off Valve.

FIRE PROTECTION FOR INDUSTRY SECTION

NEW SAFETY VALVE REDUCES DIE CASTING FIRE HAZARD

THE presence of electric, gas or oil-fired furnaces for use in conjunction with machinery actuated by oil hydraulic systems obviously introduces fire hazards of considerable proportion. Die casting machines having oil hydraulic systems frequently use hydraulically actuated cylinders for placing, holding and withdrawing core-pulling devices in the die.

Since one portion of the die must move to open and permit withdrawal of the casting, the core-pulls in the moveable die must have flexible lines or connections which are subject to wear and vibration with the ultimate possibility of breakage and the consequent release of oil at high pressure into the atmosphere.

Therefore, a valve capable of preventing the accidental discharge of oil at high pressure, particularly in the vicinity of furnaces, would reduce the fire hazard tremendously, and save lives as well as business and property.

Such a valve is being manufactured by the Shafer Valve Company of Mansfield, Ohio, and is identified as the Shafer Safety Shut Off Valve, Figure 1.

This new-type valve, as illustrated in Figure 2, is placed in the discharge line immediately adjacent to the air or nitrogen accumulators which act as pressure reservoirs in alternately storing and releasing hydraulic energy to hydraulically actuated systems such as those used in die casting machines and the like, for the purpose of preventing the discharge of oil from the accumulators in the event of excessive leakage or failure of the oil lines.

The new Shafer Safety Shut Off Valve is made so that, upon a prescribed drop in pressure in the main line from the oil pumps, the discharge line from the accumulator is promptly and positively shut off, thereby preventing discharge from the accumulator, as it can

be set for flow control, as well as act as a safety shut off valve. Irrespective of the flow control setting, the valve is said to shut off completely and positively when the line pressure falls to the prescribed setting.

Operational Procedure

Operation of the Safety Shut Off Valve is as follows:

1. It should be understood that the pressure in the valve chamber is equal to that of the pressure on the high side of the valve.
2. The valve is opened by line pressure and closed by compressed spring pressure.
3. By raising or lowering the illustrated hand lever, control valves are reversed, thus causing the main valve to open or close.
4. By connecting the pressure control to the discharge of the die

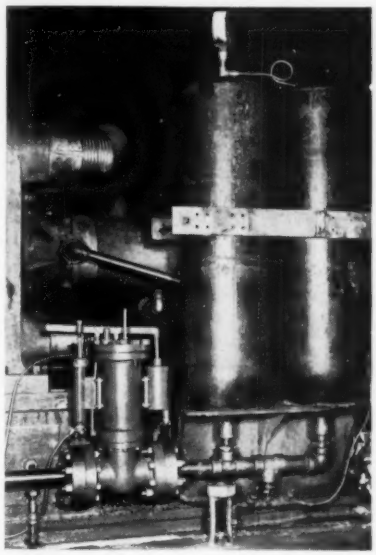


Figure 2. Valve Installation

casting machine pump, the valve may be automatically opened and closed when the pump is turned on and off.

5. Valve stem and hand wheel will raise and lower to indicate open or closed position of the valve.
6. When in the open position, the valve may be throttled by turning the hand-wheel clockwise.

WATCHMAN MANUAL

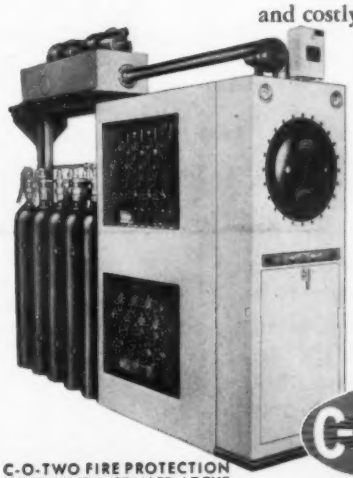
The Factory Insurance Association of Hartford, Connecticut announces the publication of a new manual, "When The Watchman Takes Over." The two-color, fully illustrated booklet is designed to furnish instruction data for watchmen and to develop the basic idea that

(Please turn to page 36)

C-O-Two helped a leading department store solve a fire protection problem

Fire, even a small one, can spread rapidly . . . create panic . . . loss of good will, equipment, buildings and human lives.

Twenty of the electric stairways at Marshall Field & Company in Chicago are now protected from fire by C-O-TWO. Little chance of cigarette butts, matches, overheated motors, or short circuited electrical equipment starting a disastrous fire. The C-O-TWO Combination Smoke Detecting and Fire Extinguishing System automatically detects smoke in the machinery room and the housing of these electric stairways. Upon a signal, non-damaging carbon dioxide is released into the threatened area, controlling the fire before panic and costly damage takes place.



C-O-TWO FIRE PROTECTION EQUIPMENT INSTALLED AT THE MAIN FIRE STATION
left to right — carbon dioxide cylinders, blowers, control valve cabinet and smoke detecting cabinet.

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COLOR AS A SAFETY FACTOR

By CHARLES E. BARBY, Color Consultant
Pittsburgh Plate Glass Company

COLOR and safety programs formerly had very much in common. Both were always present and not much was done about either. Now, however, there are a great many things that can be, and fortunately are being done about safety and about color and about both as a joint factor. People, from tillers of the soil to superintendents of sprawling factories, are awakening to the realization of the true meaning and effect of color. There is a growing understanding in practically every level of business and social life that there is more to color than meets the eye. No longer are colors chosen merely because they are pretty, durable, or protective. A color scheme is now selected with both the eye and the mind. Particular attention is given to the use of the inherent power and energy in color to produce certain desired results among the more important of which is a safety color scheme.

The scientific application of color to industrial plants and machinery as outlined by Color Dynamics is another "trifle" which has brought about tremendous advances in production. Just as purchasing agents have discovered that colored cards, tabs, and labels have proven valuable short-cuts in buying and distributing materials so have production men discovered that color has invaluable characteristics for stimulating efficient production in the safest, fastest manner.

Pittsburgh's science of Color Dynamics has proved its value to industry by reducing worker's fatigue, by lifting morale, by improving quantity and quality of production and by reducing accidents. No experiment, the principles of Color Dynamics have been widely tested with uniformly beneficial results.

The Color Dynamics system, by using bright, cheerful colors for the traditional factory gray or white, is a direct aid in discouraging disorder in plants by subconsciously implanting in the worker's mind a desire for orderliness. A natural result of orderliness in a plant is a smooth system for keeping material flowing to and from the manufacturing units. With a plant painted in contrasting and focal colors there can be no dark gray areas where material may become "lost" or overlooked. When bins and storage areas are painted a color in contrast to the stored material so that monotones and shadows are eliminated it is a comparatively easy task for the average workman to tell at a glance whether or not the supplies are getting low.

Helps In Material Handling

The task of handling materials in many plants today is a job presenting complex traffic and routing problems. No matter whether the plant is average size or a huge production center, the orderly flow of material depends upon establishment of certain 'routes' throughout the plant as well as setting-up of small intra-plant depots. As has been proved in many instances, it was not enough to outline these routes and depots on paper and explain them to material handlers. They must be clearly outlined in some specific color so that they can be recognized by all workers. Of what use are planned runways between production lines if some worker is going to stack castings in the middle of it. The definition of these areas is a prime consideration in painting a plant according to Color Dynamics.

All aisles and traffic lanes in a plant should be clearly marked not only to protect workers against thoughtlessness but to afford operators of mobile equipment certain guidemarks for efficient operations. This marking can be done by painting the full width of the aisle in a

The benefits of proper color, incorporating a traffic lane, are shown in these before and after drawings.

contrasting shade of the color of the floor area. The aisle should then be marked with a stripe of Focal Orange, which possesses the highest 'eye-arrest' power. This stripe will serve as a warning to the worker not to venture into the aisle without looking up and down the 'street' and also serve as a reminder not to stack objects in it.

Material handling departments of modern plants often have a high employee injury average. A majority of these accidents are caused by mobile equipment such as power trucks, cranes, and stationary or mobile conveyor systems. Treatment of all this type equipment with the "danger" colors can help immeasurably in increasing efficiency. Color can also help in expediting material handling in several other ways, one of which was concretely demonstrated in a large Midwestern plant. Through the simple expedient of painting certain boxes green instead of the usual black, it was found that the workers were less conscious of the boxes' size and weight and consequently were less tired by handling them with, of course, an increase in the number of boxes handled.

Color A Measurable Item

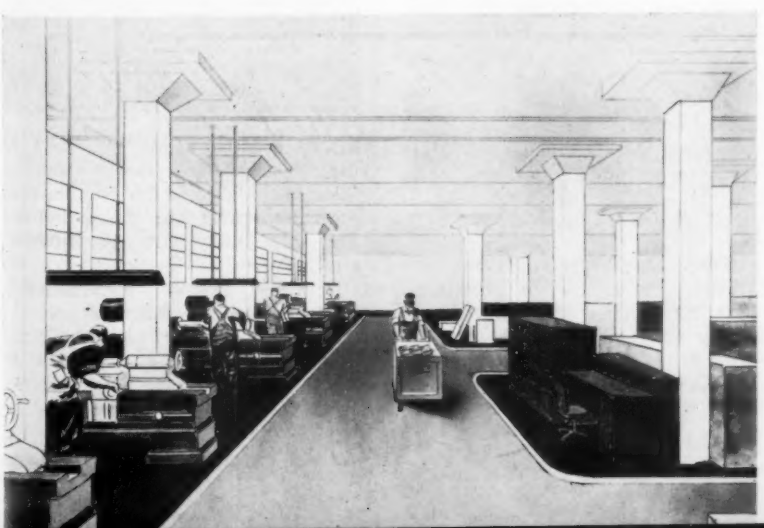
At first practical-mind production men, surrounded by heavy adjuncts of manufacture such as lathes and presses, found it difficult to see how color on the wall, on the machinery, or on the material, would lend an additional productive force. After Pittsburgh Plate color engineers had analyzed plants and their recommendations were carried out, color established itself in its rightfully earned niche with the drill press, the lathe, the jig, or the fixture as a solid, measurable item on the production schedule.

Thousands of people in today's plants are working on attractive, efficient looking machines, amid surroundings transformed from a dismal, machine-gray atmosphere to colorful, morale building production areas. Through correct choice and application, color eliminates many negative production factors and substitutes positive forces. Production men have found that scientific use of color reduces eyestrain and nervous tension on the worker. It alerts the worker mentally and physically thus reducing accidents and decreasing absenteeism and makes for better quantity and quality of production.

Material Spoilage Eliminated

The Detrola Corporation, after improvements were made in their factory by use of Color Dynamic principles, reported that in 60 days the savings they were able to make more than paid for the cost of the installation. Detrola assembly operators handle a great many small parts, many of which are dropped on to the floor. Formerly no attempt was made to reclaim them as they were hard to distinguish against the dark colored floor. Now, working against a contrasting back-

(Please turn to page 37)



As photographed, the before, above, is in the usual grays while that below has a ceiling of Cascade blue (a blue-green), yellow pillars, dark and light gray floor, traffic lanes and cart in Focal orange, and machinery is Vista green.

New PRODUCTS

NP-1 . . . FIRST AID KIT—Manufactured by the Ohio First Aid and Pharmacal Company, the handy emergency First Aid Kit Unit "No.

77" contains 32 essential items, including gauze of various widths, bandages, pads, adhesive tape, applicators, eye cups, etc. The kit is equipped with a unit location chart to simplify the finding of various items without unpacking the entire contents of the kit.

NP-2 . . . ASBESTOS GLOVE—The new No. 4815 asbestos glove made by Wheeler Protective Apparel, Inc. has full finger and palm leather re-

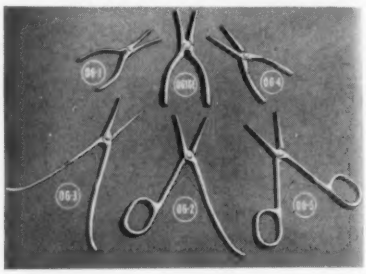
inforcement and is 14 in. long. This is claimed to be the longest wearing asbestos glove in the Wheeler line and has been carefully tested for comfort and wear. It has a roomy fit and a soft, tubular knit lining; is leather reinforced at all points of strain and at all points of hard wear. This double-duty glove will withstand both intense heat and hard duty.

NP-3 . . . FIREPROOFING COMPOUND — Fairview Finishing Co., Inc., have announced the manufacture of FYRE BAR, a fireproofing compound designed to stay put in the fabric treated. It will not migrate or crystalize out of the fabric. Manufacturer claims this compound will stay stable in the fabric for the life of same. It also renders the fabric mildew resistant and moisture resistant. Tests have been made for flashing, sparks and flames and reports show that FYRE BAR processed materials are fire resistant to all three. Because of its permanent characteristics, FYRE BAR is not affected by humidity, rain or cleaning.

NP-4 . . . INDUSTRIAL SIREN — Federal Enterprises, Inc., have developed an industrial siren for use

on cranes and similar heavy implement handling equipment. Electric cranes, mine locomotives and the like require distinctive signals under conditions that frequently call for long periods of operation with proportionately short rest periods. These sirens are designed for heavy-duty service, capable of meeting severe service requirements and even some abuse. The Model "J" is weatherproof and mount bracket is adjustable. They are adaptable to almost any warning application.

NP-5 . . . PUNCH PRESS FEEDING PLIERS—A new line of aluminum pliers for feeding stock into punch presses has been designed by Osborn Mfg. Co. With a tensile strength of 23,000 lb. p.s.i., elasticity

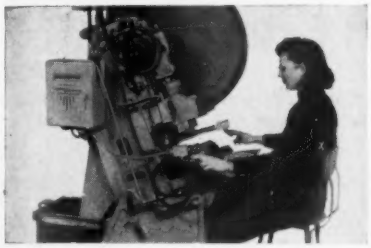


of 6.38 and a Brinell of 60, these pliers have the strength to handle stock, but at the same time they pulverize if caught in the die. As a result, there is no damage to dies and no danger of flying fragments to become imbedded in operator's hands, face or eyes.

NP-6 . . . SAND BLAST HELMET—U. S. Bureau of Mines has recently approved the new Bullard lightweight Sand Blast Helmet. The outer hood is neoprene rubber covered fibre glass, offering high resistance

to abrasive materials while retaining light weight and flexibility. Seams are vulcanized to further prolong the useful life of the helmet. The all-rubber covered exterior, which includes a molded rubber lens frame, makes it impervious to dust and fumes. Built around the famous "hard boiled hat", this Sand Blast Helmet is readily sized to fit any head comfortably.

NP-7 . . . PUNCH PRESS SAFETY DEVICE—Micro Switch have announced a new two-hand, easy-to-operate electrical device for safe control of tripping mechanisms on punch presses, riviting machines, shears, spot welders and air presses.



MICROTRIP makes certain that both hands of the operator are out of the hazard area while the press ram is in motion. The device requires that both hands touch the switch buttons in order to operate the tripping mechanism. One switch will not trip the mechanism and any attempt to tie down either of the switches or the reset button will render the entire machine inoperative.

NP-8 ... FLOOR MAINTAINER—The Clarke Sanding Machine Company have announced their new P-17 Floor Maintenance Machine that scrubs, waxes, polishes, steel-wools, sands and finishes. With its ¾ h.p. heavy-duty motor, 17 inch diameter brush, plus rugged construction it provides power, speed, large brush area, easy maneuverability and

smooth, noiseless performance. The P-17 is available for immediate delivery. Because of its easily interchangeable attachments it offers all-around utility.

NP-9 . . . FIRE TRUCK—An entirely new type of fire truck has been designed and is being manufactured by the Fire Extinguisher Division of Ansul Chemical Co. This fire truck, the first to use dry chemical as the primary extinguishing agent, provides maximum protection for airports, oil refineries, chemical plants and other installations where severe inflammable hazards exist. This unit carries 2800 lbs. of dry chemical and 250 gal. of water and is capable of a governed speed of 62

miles per hour, although greater speed can be obtained if desired. Four compartments on the sides of the truck house accessories and rescue equipment.

NP-10 . . . HANDCLEANER—Magnus Chemical Co., now offers its powdered hand cleaner in the handy 5 lb. container for easy dis-

pensing. The new package is designed especially so that the powder can be poured directly from the container into standard type wall-mounted cleaner dispensing units. The cleaner comes in heavy, medium and superfine grades. According to the manufacturer, this product has been used in industrial plants for nearly 28 years as a safe, quick and economical method of removing grease, paint, pitch, ink and all other hard to clean dirt and stains from the hands.

"Week-end reservations for me...and MY WATCHMAN!"

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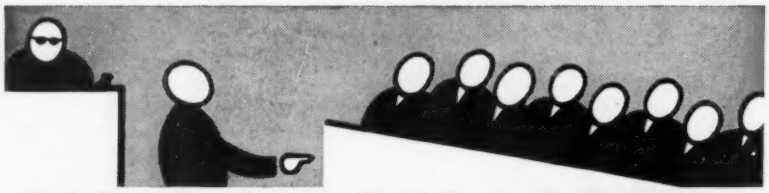

RIGHT OFF THE DOCKET

Contact Over A Period Of Time Results In Skin Irritation

CLAIMANT entered employ of the company on or about the 15th day of June, 1944. His employment consisted of working in the caustic alkali liquid room, in which room he was required to test said liquid and in the course of which, he dipped the caustic from one vat and transferred it to another, in which operation the steam from the fluid blew into his face and over his body; that in handling the liquid his face, hands, arms and other exposed parts of his body were subjected to contact therewith; that during the latter part of April, 1946, he was as a result affected by a rash on his body, hands, arms and face, which caused a severe itching with attendant discomfort, and which was accompanied by stomach pains. The rash became a permanent source of irritation and infection.

He had never before been troubled with any skin irritation prior to the time above mentioned; that on or about the 12th day of April, 1946, he learned for the first time that his condition was incurable and that he would suffer for the remainder of his life, and that by reason of the alleged accident on April 12th, he claims that he is entitled to compensation.

Company resists on the theory that the claimant does not set up the occurrence of his accident; nor does he allege any injuries as the result of his accident. In other words, the company resists the claim on the theory that the claimant is suffering from the effects of an occupational disease and not from injuries resulting from an "accident" within the meaning and under the intent and purpose of the Workmen's Compensation Act.

Nothing in the claim filed by the employee indicated any acute development from the disease, nor any statements which would serve to provide a basis for a finding of the occurrence of an accident, even under the most liberal interpretation of the statute.

The contention solely characterizes a disease sustained as being occupational in character by reason of the fact that it developed gradually over a long period of time. Since June 15th, 1944, the claimant was subjected to contact with the caustic alkali liquid.

He suffered a reaction which manifested itself in a rash or eczema affecting his body and hands; that it was not until the 15th day of Aug., 1945, which period covered a period of more than a year at the time he first came in contact with the caustic alkali. It was not until the 12th day of April, 1946, that he learned that his injury was permanent and then presented his claim on the theory that he met with an accident.

The Court held that there was no recovery under the Workmen's Compensation Act and that by reason thereof, the claim was disallowed.
Martin vs. Brown Paper Mill Co., Court of Appeal of La., Second Circuit, April 30, 1948
35 Southern Reporter, 2nd Series, Page 140

Owner Fails To Maintain A Safe Building

HARRY Kohl died as the result of the collapse of a building owned by Forsyth Leather Company and leased to the employer of the deceased. The building was a four story one built in 1910 by the Forsyth Leather Company and used as a tannery until 1939. On July 17, 1942, company leased the premises to the Schlitz Brewing Company, knowing that the latter intended to use the building for the storage of cartons of empty beer bottles.

The lease provided that the Lessor should not load the upper floors in excess of 200 pounds per square foot and that the Lessor reserve the right to enter or inspect or to make repairs or structural changes. Certain repairs and changes requested by the Lessee had been made prior to the date on which Lessee took possession, July 27, 1942.

The Schlitz Brewing Company

commenced storing bottles in the building on August 9, 1942. After the third floor had been loaded, they started to load the fourth. On the afternoon of that day a rumbling noise was heard. Some of the workmen reported that the building was caving in. It was then determined to reduce the load on the top floor. On the following day, August 10, 1942, workmen were engaged in moving some of the cases so as to reduce the piles on the fourth floor from about 14 cases in height to 10. That same morning, two of the workmen noticed that the roof had sagged over a small area and that there were signs of the floor having settled. The decedent did not have special notice of this at that time.

At about 11 A.M. on August 10, 1942, the four northwesterly bays in the north end of the building collapsed and instantly killed Kohl who was on the first floor at the time.

The widow proceeded to file an action against the owner of the building, the Forsyth Leather Company, claiming that her husband's death was caused by their failure to maintain the building as required by law, to provide a safe place of employment. There was no question that the building was so constructed as to render the premises unsafe for the nature of the employment for which it was used.

The statute provides that every employer and every owner of a place of employment shall be required to protect the life, health, safety and welfare of employees and frequenters thereof and shall furnish and use such methods, safety devices and safeguards which would reasonably protect employees or frequenters of the building and to provide a safe place for them.

The owner of the building resisted the claim among other things, on the theory that the employee's rights were reserved to him as against the employer only, under the Workmen's Compensation Act. It was concluded, however, that the liability as against the employer was limited within the meaning of the Workmen's Compensation Act and that there was no tort liability as against the employer, but the owner of the building was liable in a tort action, for neglect and failure to maintain a building that would be safe as a place of employment Saxhaug vs. Forsyth Leather, Supreme Ct. of Wis., March 29, 1948. 31 Northwestern Reporter, Second Series, Page 589

Injured On Premises Of Employment While Off Duty

APPLICANT was employed as a cashier for the Yellow Cab Company and worked on the "grave yard" shift, midnight to 8 A.M. Her husband was also employed by the company, but he worked in the daytime in the trim department. The accident occurred on pay day. Instead of waiting until midnight to collect her wages, she called at the office about 3 P.M. where she received and cashed her check. She then visited the trim room to get her husband's check. Not having received it, he asked her to call for it at the administrative office. It was the custom to allow wives of employees to receive the latters' pay checks.

While proceeding from the trim room along the route customarily used by employees and their families, in traversing a washrack, she slipped and fell, receiving serious injuries.

The company resisted the claim on the theory that the Industrial

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Commission had exclusive jurisdiction over the subject matter. The trial court ruled accordingly and the matter was, therefore, appealed. It was concluded that the Industrial Accident Commission did not have the conclusive and exclusive jurisdiction over the subject matter.

The claimant took advantage of the liberal policy of the company and entered the premises at 3 P.M. Such policy was for the convenience of its employees, not for the company. The procurement of her check and that of her husband was an extra-curricular endeavor by her in no way related to her employment. Her injury was neither one "arising out of and in the course of the employment," nor while she was "performing service growing out of and incidental to her employment," nor "proximately caused by the employment".

Since there could be no recovery under the Workmen's Compensation Act, the lower Court was reversed and further proceedings as to whether or not the company was in any way negligent under the common law theory of liability and to further determine whether the claimant was contributory negligent under the circumstances.

Robbins vs. Yellow Cab Company, District Ct. of Appeals, Second Dist. Calif., June 3, 1948
193 Pacific Reporter, Second Series, Page 956

Employee Injured While Crossing Highway To Parking Lot Controlled By Employer

EDITH McCrae was employed by the company at its plant just outside of Trenton. On the day in question, she came to work in the automobile of a fellow employee, which automobile was then parked in a parking lot belonging to the employer. This parking lot was located across a highway from the plant in which she was working.

At the close of her work, she left the plant and started for the parking lot to enter the automobile in which she came to work. As she was crossing the highway, she was bumped into and thrown down by a fellow employee who was running across the highway and going to the same place. It was the fall which produced the injury in question, which injury was later aggravated by a fall on an icy pavement. If the injury is compensable at all, the employer concedes that it is liable for the effects of the second fall as well as the first.

The employer's plant is located on two sides of a public highway. Adjacent to this plant on each side of the highway are parking yards constructed and maintained by the employer for the use of its employees. The employer provided a traffic officer whose duties were to direct traffic of motor vehicles and to provide for the safe crossing of its employees. This officer was stationed in the center of the public highway between the two gates, and was on duty at the time of the accident.

Company contends that the officer was placed there merely as a courtesy and that this accident happened not out of the employment but apart from it with the necessary deduction that no compensation should be allowed.

The parking lots in question were installed by the employer for the mutual benefit of it and its employees. Its plant is located at some distance from the center of Trenton and its interests are better served by making available the means by which employees may use their own transportation. By placing a traffic

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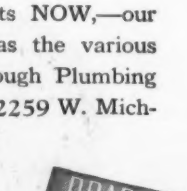


BRADLEY *washfountains*

officer in the highway at the time its employees were passing across it to reach a parking lot, the employer assumed control of the highway. Placing the officer was for the benefit of the employer and not merely a courtesy to claimant. The injury in question arose out of and in the course of employment and employee should be entitled to compensation.

McCrae vs. Eastern Aircraft, Trenton Div. Gen. Motors Corp., Supreme Ct. of N. J., June 5, 1948

59 Atlantic Reporter, Second Series, Page 376

Injured By Explosion Occurring Across The Street

Mae Raymond was employed by the Rothschild and Kaufman Company, whose factory was located in Los Angeles. While sitting at and operating a power machine for her employer, an explosion occurred at an electro-plating establishment immediately across the street.

Her machine was stationed about a foot from the west wall of the employer's building. She did not see or hear anything but a flash of light just before she lost consciousness. A huge steel frame window had broken from the wall, hitting her and caused her serious bodily injury. She applied to the commission for compensation.

Her employer's contention was that her injury was not received by reason of anything that arose out of her employment but was the result of a fortuitous circumstance. It contended that employee's injuries must arise out of and in the course of employment and must result proximately therefrom, and at the time of its occurrence, the employee must be performing "services growing out of and incidental to his employment".

It is the law that if there is a casual connection between the employment and the injury, the workman should be allowed compensation for his injury and that each case must be decided upon its own facts.

The employee at the time of the explosion was not in the building occupied by the industrial plating company.

The employer's building contained windows and window frames that were circumstances or instrumentalities of the employer and by virtue of the falling of one of the frames upon the claimant, it thereby became a proximate, if not the proximate cause of the injury. If it was the proximate cause, the accident was the remote cause. The explosion itself did not affect the employee, except by force, removing the employer's window frame which crushed her body. The frame was one of the conditions or risks of the employment out of which the injury resulted. And following the well established rule in this type of cases, it may be said that Mae Raymond serving the employer in his plant and not anywhere else, brought her to the dangerous peril attached to the peculiar situation and in the particular duty in which her employment placed her.

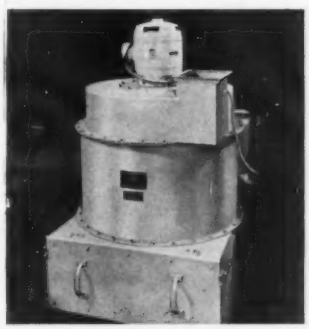
The term "employment" as used in the Workmen's Compensation Act does not contemplate the bare fact of workmen's presence in the performance of his labors at the time of injury and to justify award, it is not necessary that the person show that immediate cause of injury was the part of any work done for his employer.

In order for the injury to be compensable it need not be the kind anticipated by the employer or pe-

...remove the "hazards" of buffing

Manufacturing plants are becoming more conscious of the importance of safeguarding the health of employees. A clean shop is a productive one and better labor relations are assured when working conditions keep workers happy.

The Westmoreland Metal Manufacturing Company of Philadelphia, Pa. is one of the many companies, who have recognized these facts and are doing something about it. Their installation of Aerotec Integral Collectors has eliminated the hazards of buffing steel tubing for plating.



One of the Aerotec Integral Collectors installed at Westmoreland Metal Manufacturing Company showing compact arrangement and exhaust to room atmosphere.

Two of these units, and the method of installation, are shown above. These Aerotec Integral installations have solved the problem of an efficient, maintenance free collector, for buffing operations. Efficiency of these collectors is such, that most states permit the return of cleaned air to the room, as in the case of this installation.

With no filters to clog . . . no fluid to watch, Aerotec Integrals deliver a constant suction at the hood, with only a periodic emptying of the spacious dust bin necessary.

Designed and engineered for grinding and buffing equipment, the Aerotec Integral is specified and sold as standard by well known manufacturers of grinding and buffing machinery.

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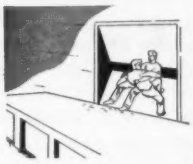
culiar to employment, but it is sufficient that injury results from a danger to which employee was exposed as an employee. Award granted.
Pacific Indemnity Company vs. Industrial Accident Commission, et al, July 13, 1948.
Second Dist. Div. 2, California, 195 Pacific Reporter, Second Series, Page 919

Employees Injured While Wrestling On Elevator Platform

A LOADING platform was present directly in front of the packing company's building on Water Street and Bridgeport. It stands a number of feet above the highway and slips gradually downward to a point suitable to loading trucks. In a back corner, is an elevator shaft and entrance to the elevator is made through a door which is opened by lifting it upwards. A person about to get the elevator can see what floor it is standing on by looking through a window in the door.

The elevator and elevator door were inspected by city employees on October 21, 1946. They found that the door on the loading platform and its rails and cables were severely rusted and ordered that they be replaced. This order, however, was not carried out until after October 30, 1946.

On the morning of that day, Shedlock and a co-employee, Casey had assisted in loading a truck and upon completing the task, and while waiting for the elevator, they both were engaged in a friendly wrestling game on the platform, which continued for several minutes. While they were so engaged on the platform, the foreman told them to stop. They continued wrestling, moving about the platform, crashed into the elevator door, causing it to fall inward, hurling the both of them down the shaft.



The claimants, however, claimed that they had stopped wrestling and were leaning on the door, looking through the window to locate the position of the elevator, and that the combined weight caused the door to give and as a result they were thrown into the shaft.

The record indicated that the company's shipping clerk and his manager were aware of the fact that they had been fooling around on the platform on numerous occasions. A few superior employees admitted that fooling around of a verbal variety were known and tolerated by them, but there was no admission that physical fooling around was encouraged or allowed.

In considering all of the circumstances surrounding this particular situation, there was the question as to whether or not the company allowed the type of fooling around such as wrestling which actually took place. It was concluded, therefore, that the only "fooling around" actually tolerated was of a verbal nature and that injury resulting while engaged in wrestling after the foreman told them to stop and thereafter fell against a defective elevator door which opened and let them fall into the shaft was not an accident that would "arise" out of a condition of the employment.

Where an employee indulges in horseplay with fellow employee and is injured, he is not entitled to compensation for want of casual connection between injury and the employment, unless the horseplay has become a condition of the employment by reason of employer's toleration thereof after knowledge of its existence.
Shedlock vs. Cudaby Packing Company, Supreme Ct. of Errors of Connecticut, July 17, 1948
60 Atlantic Reporter, Second Series.

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TECHNICAL FILE ON TOXIC GASES AND VAPORS

SAVE THIS VALUABLE REFERENCE MATERIAL: BUILD UP A PERMANENT OFFICE FILE.

This reaction within the body cells may be due to a combination with the iron and sulphur there, which prevents absorption of oxygen from the blood and makes exchange with carbon dioxide impossible. Because of these toxic actions, stomach washes and oxygen administration have little value in treating victims of the gas poisoning. In large doses, suffocation is almost immediate and is characterized by a cold sweat, dilation of pupils, glassy and staring eyes, painful panting, convulsions, unconsciousness, collapse and death.

Where doses have been small, symptoms may be delayed for as long as fifteen minutes, but the poisoning is still acute and the early signs are distress around the heart, dizziness, headache, nausea and staggering. The breath has the characteristic almond odor, the skin may be pale at first and then quite red. Coma usually precedes death.

In sub-acute poisoning, early symptoms may be cough, apathy, shortness of breath, and pains due to the disturbances of the nervous system.

Chronic poisoning, due to exposure to small doses over prolonged periods, is considered very rare. Possible symptoms are general weakness, unsteady gait, loss of appetite, head and stomach pains. Nausea and vomiting are characteristic disorders.

D 37. FIRST AID TREATMENT. First aid rescue treatment in the case of acute, quick gas poisoning is usually futile. All rescuers should protect themselves with approved gas masks in getting a man to fresh air. Although the action is so rapid that medical aid generally comes too late, all victims should be put under a doctor's care as quickly as possible. If the victim lives for three or four hours, he frequently will survive and, after a few days of rest, will suffer no chronic effects. A diet high in fat is of value in such cases.

Recent experiments have indicated that even in acute cases, where respiration has ceased, a valuable treatment may be the immediate forced inhalation of amyl nitrite in conjunction with artificial respiration. The dose lasts fifteen to thirty seconds and is repeated every three to five minutes, as long as the victim is unconscious or rigid. All victims should be kept under constant observation for twenty-four hours.

D 38. PREVENTION AND CONTROL OF HAZARD. Because hydrogen cyanide gas poisonng is fatal so quickly, the question of prevention and control of the hazard should be given the main emphasis in the plant that is alert. Detection of the gas is easy, due to the almond odor. Air samples in work rooms exposed to the hazard should be taken and tested regularly by competent laboratories, along lines similar to tests for carbon monoxide concentrations.

Safe limits for hydrogen cyanide, as suggested by the U. S. Public Health Service, are set at less than 18 parts of the gas by volume (0.02 milligrams per liter of air) to 1,000,000 parts of air.

All acid or heat processes involving the gas should be isolated completely or protected by exhaust systems. No workers should be permitted to enter gas-filled chambers even with gas masks until ventilation becomes complete and thorough. No one is, or ever becomes, immune. Education of workers to the danger of this gas is never complete as long as one accidental death occurs.

D 39. IRRITANT GASES. Gases given off by hydrochloric acid, sulphuric acid, hydrofluoric acid and formaldehyde, all represent a group of irritants whose common characteristic is that they are relatively soluble.

Because of this feature, their chief harmful effect is upon the moist membranes of the upper respiratory tract, eye and throat membranes. They rarely are absorbed into the blood stream and affect the surface tissues only. However, certain irritant gases also can affect deeper tissues and organs, not only because they are readily soluble, but because they change chemically in the presence of moist tissues to more corrosive, toxic substances. Such gases are sulphur dioxide, chlorine, iodine, bromine, acrolein and dimethylsulphate.

D 40. AMMONIA GAS. Ammonia is a colorless gas with a pungent, irritating odor. It can be compressed to liquid form and, when released suddenly, boils explosively. It is readily soluble in water, alcohol and ether. It tends to rise quickly, as its relative density to air is 0.597. In commercial form it is usually a liquid, being a solution of the gas in water.

D 41. TYPICAL EXPOSURES. Liquid ammonia is known familiarly as a refrigerant, but the gas can be present in the manufacture of various products, such as dyes, intermediates, synthetic drugs, perfumes, soaps, ceramics, glues, cements, inks, paper, pulp and soda ash. Other industries use it as an agent for cleansing, bleaching, fireproofing and resin-condensing. It can be obtained as a by-product

TECHNICAL FILE ON TOXIC GASES AND VAPORS

in gas plants and coke ovens, and is commonly formed in the decay of organic material.

A complete enumeration of its more recent uses in industry is difficult, but it is increasingly known in such roles as an accelerator in rubber vulcanization, as a solvent in certain rayon processes, in sugar refining, in fireproofing wood, in printing and dyeing processes, in lubricating, photographic developing and engraving, wool-scouring, mirror manufacture, fertilizer manufacture, electroplating, and in brass, steel and other metal industries.

D 42. DANGERS OF AMMONIA POISONING. Because the biting odor of the gas gives a quick warning signal, fatal exposures to the hazard are not common. Obviously, ingestion of the liquid form would be a suicidal, not an occupational, hazard. Smarting of the eyes and skin is a good indication that the gas is free somewhere in the air. Since some workers are more susceptible to such irritations than others, any redness or itching of exposed skin or membranes should be considered a sign of injury requiring removal from the hazard. When difficulty in breathing is experienced, the amount of gas in the air can be considered dangerous. The U. S. Public Health Service has suggested a maximum allowable concentration of the gas to be 85 parts per million parts of air, by volume, for the work shift. A very short exposure to over 5000 parts per million is usually fatal.

D 43. EFFECT OF EXPOSURE. As with other soluble irritant gases, the main effect of exposure is upon the moist breathing membranes and eye surfaces, and any moist skin that is uncovered. Any worker conscious of an irritation of these surfaces should seek fresh air immediately. The gas tends to inhibit or prevent respiration by its caustic action on the upper respiratory tract. Rarely are doses sufficient to get into the lungs, but if that situation should occur, as in a refrigerating system leak, or a discharge from an ammonia tank, the worker exposed may become unconscious immediately, as respiration may stop or the throat may become closed at the windpipe. The victim is overcome without being able to exhale the gas.

D 44. FIRST AID TREATMENT. All workers overcome by the gas should be removed to fresh air at once and, if breathing has stopped, first aid in the form of artificial respiration by the prone pressure method should be begun immediately. Other members of the squad should call a doctor, and the fire or police department rescue equipment should be summoned if none is on hand at the plant. A throat-tube may be necessary if air passage is closed.

Because ammonia is an irritant and not a true poison, any victim of a gas attack, no matter how severe, if attended to immediately, has an excellent chance of recovery. A rescued worker experiences no after effects and usually will be free from symptoms within three or four days. The doctor should give approval for return to work.

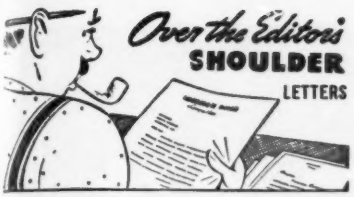
D 45. TREATING MILD EXPOSURES. In the case of milder exposures that merely cause local irritations, burns on the skin or the eyes should be bathed freely and immediately with ample splashes of water to dilute the irritant. Then the doctor should be consulted for diagnosis of injury and treatment. Eye-washes and a bland oil spray for the nose and throat are the usual procedures. Severe burns can cause permanent eye damage. Workers who are exposed continuously to only small concentrations of the gas in the work room will suffer no actual disease, as there is no absorption in the body.

D 46. DERMATITIS. *Chronic* ammonia poisoning is considered impossible. A dermatitis, however, is frequent from continued exposure to strong ammonia solutions. Fortunately, this tends to clear up readily upon removal from exposure.

D 47. PREVENTION. Prevention programs in the presence of ammonia hazards should include covered processes, if possible, exhaust equipment as second choice. All systems should be installed carefully and inspected regularly for leaks. Any doubtful concentrations should be analyzed by the air sample test method in a competent laboratory. Workers should be informed of the dangers and encouraged to report at once any detection of the gas. They should use protective equipment, such as rubber gloves, goggles, skin ointments, respirators or air-line helmets in emergency cases. First aid techniques, which include knowledge and practice of artificial respiration, should be part of every department's training. No one ever becomes immune to ammonia poisoning. Running water and fresh air should be within quick reach in the presence of any known hazard.

D 48. HYDROCHLORIC ACID GAS. Hydrochloric acid, also known as hydrogen chloride, muriatic acid and chlorohydric acid, gives off a colorless gas with a biting odor. Like ammonia, it is readily soluble in water, alcohol or ether, but since relative density of the gas to air is 1.269, there is little tendency to rise. Instead, it may be expected to hover over and down the lips of containers. It is encountered usually in a water solution.

(To be continued)



Do you have any questions, theories or ideas concerning industrial health or safety? If you want to give them a good airing—send 'em along. We'll publish all space permits.

Accidents In The News

OCCUPATIONAL HAZARDS:

Your November issue carries the usual interesting page of Accidents in the News. The first one on page 36 is not new to me since I have heard of other such accidents.

I was astonished, however, to read your suggested prevention which states that only hair nets and proper training is required. This answer has all the earmarks of a non practical analysis.

The proper answer should be head protection and training PLUS belt and shafting guarding. Head protection and training, as you state, cannot prevent an accident of this sort since we are dealing with human beings. What happens when a turban is torn, missing or needs rewashing? Will *all* employees immediately take care of it? Head protection and training is a "brush off" answer.

It is only a matter of time before such accidents happen in any plant lacking an effective machinery guarding program. Head protection should be considered only as a secondary protection for those cases where a complete guarding job cannot be made. Certainly, exposed shafting and belting does not offer any problem in guarding. It does offer a common excuse "Nobody goes there."

My criticism is not directed at the factory where this accident happened, but at you for publishing such an answer.—E. Guilbert, Safety Director, Republic Drill and Tool Company.

Reader Guilbert is, of course, correct in stating that the guarding of shafting and belting is the first step in preventing accidents of this type. We thank him for his letter—first of many similar ones received by us. In past issues of OCCUPATIONAL HAZARDS we have run many articles and references to the importance of guarding exposed shafting and belting and it was purely by accident that mention of such guarding was omitted in this instance.

In reference to reader Guilbert's third paragraph, however, it is the editor's thought that if employees are thoroughly trained and if the safety department has given enough thought to the matter, all female employees will be supplied with clean turbans at all times, and furthermore, will be wearing same while on the job.—Editor.

Cost Of Accidents

OCCUPATIONAL HAZARDS:

Please send us reprints of the series of articles on Paul Windsor's "Cost of Accident" report.

We find this would be most valuable in our industrial hygiene work in California.—Herbert K. Abrams, M.D., Chief, Bureau of Adult Health, Department of Public Health, California.

We have sent out some 65,000 reprints on this article since the original was published in the March, 1948 issue.—Editor.

SCRUB... the AIR
in your plant CLEAN
with Schmieg
CENTRI MERGE
Automatic
DUST and FUME
Eliminator
Dust and fumes don't get a chance to circulate in plants equipped with a Schmieg CENTRI-MERGE Eliminator. The moment dust or fumes develop from buffing, burring, grinding, polishing, curing or any other processing operation, they are swept up on an air stream that carries them back through ducts to a central Collection Unit. In the washing chamber of this Unit the CENTRI-MERGE high pressure centrifugal water action literally scrubs every last vestige of contamination from the air stream—cleans it so thoroughly that, in many cases, it can be recirculated back into the plant. That's why users are so enthusiastic about what CENTRI-MERGE accomplishes. Protects both workmen and work.
Consult Schmieg engineers regarding your problems of dust and fume control.
THE best AIR PURGE is CENTRI MERGE
Schmieg INDUSTRIES INC.
Engineers & Manufacturers
303 PIQUETTE AVENUE • DETROIT 2, MICHIGAN

. . . And Sudden Injury

This is the result of a dust explosion in a furniture manufacturing plant. This man was buried for twelve hours, suffered head injuries, shock, exposure and possible multiple fractures. He lived to tell about it, even though the four story building was completely wrecked. Five killed, six others injured. *(International News)*

AND SUDDEN INJURY

Some months ago (April, 1948) OCCUPATIONAL HAZARDS published an article concerning the importance of good housekeeping in industrial plants with special emphasis placed on the furniture industry. The picture to your left was taken after a dust explosion wrecked a furniture manufacturing plant.

It is pretty safe to say that where dust explosions occur — good housekeeping didn't!

The problem of dust explosions is a serious one and concerns many more kinds of industrial operations than is generally supposed. To many persons, the grain and flour mills and elevators represent the biggest hazards as far as dust explosions are concerned. It may prove surprising to know that as a matter of fact many wood dusts are more explosive than flour dusts. This fact is borne out by a recent study of "explosibility ratings" by the National Board of Fire Underwriters and the United States Department of Agriculture. Ratings of various substances were based from "0" to "10", according to their degree of explosibility. Graphite dust, for instance, being rated as "0" because of its absence of explosive characteristics and Alkali starch dust being "10" because of its extremely hazardous explosive properties. Of interest here is that while wheat flour was given a rating of "5" (plenty dangerous!) Cedar, Chestnut, Oak, Pine, Redwood and Spruce were all rated as even more explosive—from "6" to "8"!

From this we can see exactly how dangerous it is to permit poor housekeeping in the shop of a furniture manufacturer. Such practice permits wood dusts to accumulate and so sets the stage for a violent explosion and the picture we have on our left. A study of individual plant hazards will usually reveal a method to eliminate or greatly reduce the explosion hazard. Built-in dust removal systems, built-in vacuum cleaner systems, exhaust fans, portable dust collectors and vacuum machines all play an important part in reducing this serious hazard.

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Featherweight Head and Eye Protection

You'll look a long time to find face shields to equal those in the famous Dockson line.

Feather light, sturdy, spark and fire resistant, these popular shields afford wide angle, undistorted vision and solid comfort for the wearer. Model No. 1120 shown, has pivoted, metal bound window.

Write for Dockson's Safety Catalog showing the many styles available . . . they are priced for the thrifty buyer.

DOCKSON CORPORATION 3839 WABASH • DETROIT 8, MICH.

Dockson

• BUILT FOR BETTER SERVICE • BUILT FOR BETTER SERVICE • BUILT FOR BETTER SERVICE • BUILT FOR BETTER SERVICE •

HANDEEZ

REMOVES SHOP GRIME *SAFELY!*

Don't confuse HANDEEZ with ordinary harsh abrasive-action hand cleaning compounds. HANDEEZ works differently—through a gentle emulsifier blended with a sterilized vegetable emollient. It **lifts** grime from the pores, leaving skin tissue unharmed and unbroken by tiny crevices which invite infection. Cutting oils and other deep-seated shop grime yield readily to the HANDEEZ formula which spells prompt, efficient cleansing with the added skin-safety factor.

Write for the booklet "Be Kind to These Hands."

THE C. B. DOLGE CO.
WESTPORT, CONNECTICUT

STOP FIRE FASTER!

WITH THE MASTER OF FLAME ANSUL* REG. U.S. PAT. OFF. FIRE EXTINGUISHING EQUIPMENT DRY CHEMICAL

FIRE EXTINGUISHERS

MORE AND BETTER FIRE PROTECTION FOR YOUR FIRE EXTINGUISHER DOLLAR

Ansul Dry Chemical Fire Extinguishers give you more protection... pound for pound... dollar for dollar... than any other extinguisher of comparable size.

In addition... Ansul Fire Extinguishers provide the best first-aid protection:

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- For hazards involving alcohols, solvents, gasoline, oils, asphalts and greases.
- For electrical equipment hazards.

Ansul Fire Extinguishers have the highest ratings for effectiveness on flammable liquid fires, based on tests conducted by nationally recognized approval agencies. The longer range stream of dry chemical is effective in winds and drafts.

After use, Ansul Dry Chemical Fire Extinguishers can be recharged "on the spot"... providing continuing protection... and annual recharging of Ansul extinguishers is *NOT* necessary.

Safe to use... non-toxic, non-corrosive, non-abrasive.

Ask for your copy of file No. 231. You will receive factual data on how Ansul Dry Chemical Fire Extinguishers will cut your fire protection costs.

Listed and approved by Underwriters' Laboratories and Factory Mutual Laboratories.

Ansul Model 30

Ansul Model 20

Ansul Model 4

ANSUL CHEMICAL COMPANY
FIRE EXTINGUISHER DIVISION, MARINETTE, WISCONSIN
DISTRIBUTORS IN ALL PRINCIPAL CITIES

WATCHMAN MANUAL

From Page 21

successful watchman service depends upon the extent to which management is willing to accept responsibility for maintaining such service.

The realization that a plant is under the control of a watchman over half of the time and acts on behalf of management in safeguarding the investment of stockholders points up the vital necessity of maintaining complete watchman service. Since, in a matter of hours, or even minutes, a successful business can be destroyed through the perils of fire or explosion, it is of the greatest importance that men to whom these values are entrusted shall be chosen not only for character, reliability, competency and has the responsibility of efficiently carry- judgment but also that they shall be properly trained to act in an emergency.

Basically, both management and the watchman share a joint responsibility in safeguarding plant property: management to plan the service, select and train the watchman, while the watchman ing out the duties assigned to him.

Copies of this manual are being mailed to all FIA policyholders and to agents and brokers. Copies are available for general distribution upon request to the FIA Department of Information, 555 Asylum Street, Hartford 2, Connecticut.

COMING SAFETY SHOWS

March 14-15, Boston, Mass.
Twenty-eighth Annual Massachusetts Safety Conference. Edgar F. Coppell, president-director, Massachusetts Safety Council, 31 State St., Boston 9, Mass.

March 27-30, New York
Nineteenth Annual Greater New York Safety Convention. Paul F. Stricker, executive vice-president, Greater New York Safety Council, 60 East 42nd. St. New York 17.

April 12-14, Columbus, O.
All - Ohio Safety Congress. James H. Fluker, superintendent, Division of Safety and Hygiene, Industrial Commission of Ohio, Columbus, Ohio.

April 19-21, Pittsburgh, Pa.
Twenty-fourth Annual Safety Engineering Conference. Harry H. Brainard, executive manager, Western Pennsylvania Safety Council, Chamber of Commerce Building, Pittsburgh 19, Pa.

COLOR AS A SAFETY FACTOR
From Page 23

ground and a light painted floor, fewer parts are dropped and those that are can easily be reclaimed, resulting in the saving mentioned previously.

In essence, the scientific use of color is based upon principles somewhat similar to camouflage, but in application it is diametrically opposite. To camouflage an object, color is used to mislead, to hide, or to obscure; in Color Dynamics, color is used to highlight, to reveal, to emphasize, and to utilize. Basically Color Dynamics seeks to, and improve for man-made surroundings the color harmony found in nature's pleasant color combinations. The first job of color in its application to machinery is to separate the critical parts from the material worked upon.

Focal Colors Important

Color Dynamics give the critical or operating parts a color that comes quickly to the eye—a color that "moves" in strong contrast to the stationary of non-critical parts of the machine. These are known as focal colors and include Focal Ivory, Buff, Light Green, Blue, Yellow, Beige, Red, Orange, Focal Light Gray and Focal White and Black. The primary purpose of focal color is, in combination with their complementary colors, to focus the worker's attention exactly where it should be, on the object being produced, with the least possible effect on the eye muscles. They also arrest the eyes and reduce unnecessary eye travel. As the critical machine part must move forward the non-critical parts must drop back. The widely used machine-gray does this to a certain extent but is in itself a depressing, morale-lowering monotone. After careful study and research a receding color known as Vista Green has been developed for the body of the machine. Another color possessing much the same qualities but less intense called Eye-Rest Green was developed for use on walls of factories. No other color has such a relaxing and soothing effect on the human eye as has green and yet it does not in any manner suggest depression. This color scheme is predominant in the natural world. The widespread use of green in field and forest suggest life, job, and relaxation. When nature is depressed she clothes herself in dank, dark gray shrouds of rain, fog, or mist.

Color Variety

Various colors were developed for treating the walls, ceilings and other surfaces of the plant itself. Among these are Cascade Blue, used ordinarily on ceiling to make them appear to recede, another shade of green possessing the same qualities as Vista Green but less intense, was developed for walls. A light Dixie gray is used for floors, particularly in assembly rooms and a special white has been made available for floors in large aircraft plants. Workbenches in assembly rooms can be treated in much the same manner as machines with the color scheme being dependent upon the type and the color of the material worked with. While the best results are obtained by painting the plant, the machines, and workbenches in the same general color scheme, individual treatment of any separate unit afford improvement.

Light And Color Coordinated

Years ago factories were constructed or decorated with little or no regard to the coordination of illumination and color. Usually the lighting was inadequate, so the walls and ceilings were painted or

Goggles in protective position. They may be worn over prescription glasses.

To raise goggles, pull forward and up in one operation. Prescription glasses do not interfere.

In "off-guard" position, goggles rest against headrest, are put "on-guard" again in less than a second.

JACKSON HEADREST GOGGLES

For Gas Welding, Cutting, Brazing, available in two types:
Type W-50, at left, with plastic headrest and telescopic arms.
Type WR-50, same goggle assembly, with elastic head band.

For Chipping and Grinding, available in two types:
Type G-50, as shown. Clear hardened lenses, no baffle plates.
Type GR-50, same goggle assembly, with elastic head band.

Type BX Eyeshield for Gas Welding, Cutting, and Brazing. Standard lenses 2" x 4¼" in shades from 3 through 6. Lens retainer of moulded plastic.

Headrest Spectacles LBT-50 for Light Welding, Cutting, and Brazing, where complete eye covering is unnecessary. 50 mm. lenses, shades 3 through 6.

Type J-1 Eyeshield for Metal Finishing, Metal Pouring, Spot, Gun, and Flash Welding, Wood Working, etc. Visor in several shades and thicknesses.

Protecting the eyes of industry

JACKSON PRODUCTS

WARREN MICHIGAN

REPRESENTATIVES IN PRINCIPAL CITIES OF THE U.S. AND CANADA

white-washed glaring white in the misconceived hope that this would help the situation. This practice instead of helping production, actually accomplished the opposite by damaging the workers' eyes. Tests in one factory revealed that approximately 40 percent of the employees were in need of professional care. As illuminated methods improved, more thought was given to the treatment of the interior building surfaces with eye-rest and morale building colors which would at the same time possess sufficient light distributing and reflecting power.

An outstanding example of the highly satisfactory results obtained with proper color and light was in a Midwest metal working plant. Discussing the results of the color styling of this plant, the superintendent said, "After the painting and without any further change in lighting, the footcandle readings at the critical areas of the machines have increased a minimum of 15 percent in some areas and a maximum of 40 percent in other areas." A similar result was noted in the offices of a large metal container plant where colors produced such a beneficial effect that an employee was prompted to say, "Here we used to get along with light that by measurement was only 10 footcandles." Some of us now complain when we have to go to the far corner to the files where the illumination is worst and now measures 25 footcandles. Thus by making most efficient use of available illumination, engineered color schemes have eliminated dark, drab working areas which constituted a standing invitation to accidents, as well as helped materially to reduce accidents.

Color Has Proved Valuable

Color not only has a physiological effect on the human eye and nervous system, it has a profound psychological reaction on the mind. Certain colors have the "power" to elevate the mind while others can blunt the nervous system and act as depressants. Still others create confusion. The mental and physical impact on a person of proper and improper color can be compared with the reaction caused by sound or more particularly by music. The discord of untrained musicians has a jarring effect usually to the point of physical reaction. On the other hand the beautiful cadences of a trained symphonic group can guide the mind and body through various moods ranging from sadness to sublime happiness.

Color harmony produces essentially the same reaction as any other harmony—when properly utilized a particularly desired effect is produced — when improperly used it creates a discordant element. Unlike tonal harmony, however, color harmony—or discord—is a constant, not variable factor in industrial plants, inasmuch as color or paint cannot be removed or applied as easily as an orchestra or a recording. With the phenomenal development of the scientific use of color in recent years and its practical application and acceptance by industry, little doubt can exist that it is becoming an important factor in planning the new machinery and plants of America. Industrialists familiar with the almost miraculous results obtained with the scientific use of color, claim that the painting system will become widely adopted.

Read pages 24 and 25 for late information on new products in the industrial health, safety and fire field. Fill in special card for free information.

Faster Floor Traffic

SAFELY

WHEN FLOORS ARE TREATED WITH

VESTA-GLOSS

Do slippery floors put a brake on your production schedules? Do they slow up foot traffic, thus increasing operating costs? Are they a constant accident hazard? Here's the answer: Have your factory and office floors VESTA-GLOSSed. It pays in many ways!

One trial will prove that VESTA-GLOSS is far superior to ordinary floor waxes. It combines slip-resistant safety with lustrous long-lasting beauty plus sizable economy in application and maintenance costs. And VESTA-GLOSS is so easy to apply . . . and to clean. It is non-tacky. Write us for free demonstration.

The ONE Floor Wax that provides ALL SIX of these floor maintenance essentials (1) Slip Resistance (2) Wear Resistance (3) Water Resistance (4) Lustre (5) Self Leveling (6) Non-Tacky.

Approved by Underwriters' Laboratories

BRITEN-ALL

A highly concentrated liquid cleaning compound for floors and woodwork. BRITEN-ALL is a neutral floor cleaner that cleans better, safer, easier—at lower cost.

VESTAL ELECTRIC FLOOR MACHINE

Scrubs and polishes faster. Easy to operate. Safe. Exceptionally quiet. Sturdy, perfectly balanced construction.

VESTAL INC. ST. LOUIS • NEW YORK

NEW DAVIS GAS MASKS

WITH RED OR WHITE, SOFT CUSHIONING FACE PIECES

GREATER COMFORT—Special flexible rubber compound used in the face pieces provides soft cushioning—a comfort your men will appreciate.

WIDER VISION—Lenses are shaped and positioned in relation to the eyes so that wider vision is obtained without using oversize lenses—without the danger of easier breakage of larger lenses—without the annoyance of disturbing reflections.

LONGER LASTING—The unusual lasting quality of the special rubber compound used in the face pieces gives longer service—reduces maintenance cost. Many masks made of this same rubber compound have been in use for over 15 years.

RED MASKS—For general industrial use.
WHITE MASKS—For ethyl operations.
Canisters for all gases are available.
Write for "Section B."

SAFETY DAVIS DIVISION

DAVIS EMERGENCY EQUIPMENT CO., INC.
59 Halleck Street, Newark 4, N. J.

Edmont
TRADE MARK REG. U. S. PAT. OFF.

Fabric Lined **RUBBER GLOVES**

. . . your best insurance against DERMATITIS!

No Rubber -to-Skin Contact
LOOK FOR THE FABRIC LINING

Redmont No. 934 Gauntlet
(14" overall length). 10" and 12" overall length gauntlet and knitwrist styles available.

POSITIVE HAND PROTECTION with Edmont

the protective glove for industry

For the best of protection let the exclusive safety features of Edmont work gloves guard your workers' hands against costly irritations and injuries.

See your Safety Equipment or Industrial Supplier.

Edmont Manufacturing Co., 529 Orange St., Coshocton, Ohio

THINK OF SAFETY FIRST AND GET SAFETY *Plus*

● Here is a revolutionary new safety glove . . . SECO. The glove is durably coated with a flexible synthetic whose middle name is stamina. Its lining is cotton fabric. A pair of SECO's is a pair of aces . . . a pair that can't be beat. And here's why . . . SECO means:

SAFETY—Costly injuries are prevented in use with acids, alkalies, chemicals, greases, oils. Withstands rugged abrasive wear and flying sparks. Leakproof. No snags, no tears. You buy safety when you buy SECO.

ECONOMY—There are savings at your fingertips with the coating that makes SECO's I-a-s-t. An extremely tough, durable work glove that can't peel. From 3 to 18 times longer wear, depending upon the operation. Production efficiency; economical safety!

COMFORT—Dry and safe hands with SECO. Flexibility, with finger freedom, means work-ease always accepted by employees. Lining is soft cloth —comfortable safety!

OK'D BY INDUSTRY—Enthusiastically used where production is threatened by hand injury. Proven in test and in operation. Users repeat orders because: "A better work glove" . . . "We buy only one-half as many gloves now" . . . "Better protection than rubber substitutes; keep hands cleaner" . . . "In our operation canvas gloves last 4 hours; SECO's, 48" . . . "Outwears leather 4 to 1" . . .

The coating is a process of Arcadia Mfg. Co., Birmingham, Mich.

Also available: Knit wrist with open back . . . 500

SECO SAFETY PRODUCTS CO.

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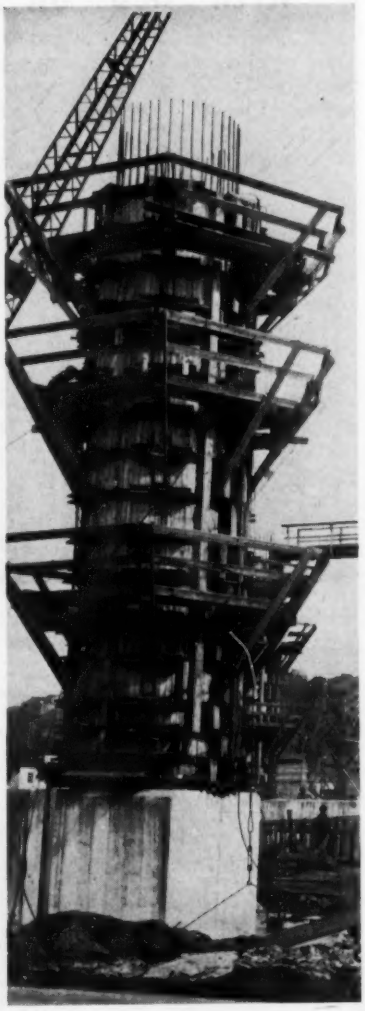
Branches at Grand Rapids, Michigan and Chicago, Ill.

SAFE SCAFFOLDING



Scaffolds with wide angle railings and well-built wooden stair towers are used by the Contracting Division of Dravo Corporation, Pittsburgh, to provide protection for workmen during the construction of a bridge superstructure. Space between the railing is covered with wire mesh that protects workmen from falling objects.

USEFUL LITERATURE

Don't forget to look at page 47 in this issue! You may find many of the free booklets and catalogues listed there useful to you in furthering safety in your plant. Fill in the enclosed postcard.

INDUSTRIAL
Accidents in the News . . .

These accidents are taken from the pages of the Nations Newspapers. They've all happened—they didn't have to!

Carlsbad, N. M., Current-Aro:

John Viers, 39, an employee at Stearns-Nager Co., suffered injuries when he fell from a scaffold at the Southwestern Public Service Company's steam plant east of the Pecos River. The accident happened when Viers slipped and fell about 15 feet from the scaffolding where he was working. He was admitted to a local hospital.

Prevention:

The same precautions should be taken on a scaffold 15 feet from the ground as one that is 115 feet from the ground. In the January 1948 issue of this magazine (And Sudden Injury) appeared a picture of a painter killed after falling only six feet to the ground. Suitable guard rails should be installed on all scaffolds, regardless of height from the ground. Loose rope ends, paint cans, brushes, etc., should not be placed on the flooring of the scaffold as they create tripping hazards.

◆

Eastland, Tex., Telegram:

Darwin Miller, employe at Victor Cornelius' printing establishment in Eastland, who was burned about the face and chest Saturday afternoon when there was an explosion of some chemicals about which he was working, was reported this morning as having had a fairly good night last night but was running temperature.

Miller was taken to Eastland doctor immediately after being burned. After emergency treatment he was taken to the West Texas Clinic at Ranger where he is at this time.

Prevention:

OCCUPATIONAL HAZARDS Magazine has run several articles in the recent past concerning safety in laboratories. Whenever persons are working with chemicals they should always keep in mind that an explosion can easily occur. Even the experienced technician should never mix chemicals or make experiments unless he is wearing proper protective apparel. Such equipment should always include goggles or a face shield.

◆

Pittsburgh, Pa., Post-Gazette:

Blackdamp snuffed out the lives of three Follansbee Steel Company workers—one as he checked a 60-foot water well and the other two as they attempted to rescue him. The dead were: Charles Fowler, 60, a pipe fitter foreman; Roger Ryan, 34, a pipe fitter's helper; John Schmitts, 30, a pipe fitter. Fowler was the first to be overcome. Schmitts, seeing Fowlers plight, went down a ladder into the well and also was overcome. Ryan then entered the well to aid his companions and likewise was overcome and fell to the bottom.

Prevention:

Carbon dioxide (blackdamp) frequently collects in unventilated pits or old mine workings. Exposure to an acute, high concentration of the gas can cause sudden depression, coma and death within a few minutes due to the sudden paralysis of the respiratory system and oxygen-deficiency of the nervous system. All such places where blackdamp is likely to exist should be tested before workers enter. Air-supplied respirators and rescue harness should be provided, and an attendant should remain outside to guard the worker and his equipment.

◆

Naugatuck, Conn., News:

William Keith, 43, of Beacon Falls, suffered a tramatic amputation of the fifth finger and a severe laceration of the right hand when a board he was cutting with a power saw slipped. Keith, a carpenter at the W. J. Megin Inc., was working in the company lumber mill when injured. He was rushed to Waterbury Hospital by a company employee. Hospital authorities in reporting his injuries said that he is in "good" condition.

Prevention:

Circular rip or cross cut saws should be guarded by a hood which covers the saw at all times to at least the depth of the teeth and which automatically adjusts itself to the thickness of the material being cut. As an extra measure of safety, operators should, wherever possible, use a stick to push the end of material being cut into the saw.

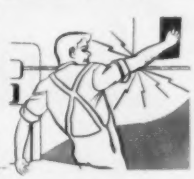
◆

Wilmington, Del., News:

Sterling Huddle, 48, of Elsmere, was electrocuted at the Joseph Bancroft and Sons Company plant at Kentmore. He reached over electric wires of a welding machine to shut off a water valve and came in contact with the wires of the machine. It was reported that Huddle's hands were wet at the time of the accident.

Prevention:

This welding outfit might have been one of the old style AC transformer types which do not conform to NEMA specifications. This hazardous equipment should be junked. In any case, regardless of type of welding unit, wires supplying power should never be placed in such a position that workmen are exposed to them. It is usual for such lines to drop to the machine directly from above. Periodic inspections should be made to see that the wires are properly insulated—making it impossible for anyone to suffer injury even if they come in direct contact with the lines.



Safety... with MASTERPLATE Sparkproof Floor...

Wrote the Arco Co. plant engineer—"Masterplate Floors were selected to eliminate or minimize explosion and fire hazards because of their sparkproof and static disseminating properties."

Masterplate Floors also wear up to 5-6 times longer than ordinary concrete floors and are easy to keep clean. Why? Because with Masterplate, containing specially processed iron particles and cement dispersion, up to 120 lbs. of metal can be floated into a concrete floor and *kept at the surface.* Result—a thick, ductile iron-concrete surface which is sparkproof and resists grinding wear, impact and corrosion.

Write for complete information.

the MASTER BUILDERS Co.

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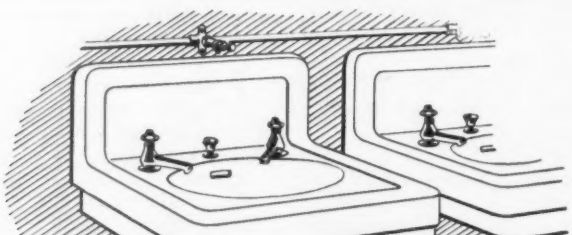


Systematized Sanitation

for your entire plant

- Labor-saving methods
- Lower housekeeping costs
- Better results with your personnel
- Fitted to your own needs
- 30 years proved performance
- Integrity in products and service
- Guaranteed satisfaction

Write today for booklet about this simple, individualized plan.

The GERSON-STEWART Corp.

LISBON ROAD · CLEVELAND, OHIO

WISE OWL CLUBS

From Page 14

So far the club has enrolled just over 150 members. The rules are strict. There must be incontrovertible evidence of an accident that would have caused blindness. A broken pair of safety goggles is not enough. They might have been lying on a bench when a weight fell on them. There must be witnesses or some other proof. A committee of veteran Wise Owl Club members investigates and passes on the new applicant's qualifications. Then there is an official ceremony in the plant. The plant manager of the company presents the Wise Owl badge, calls on the new member to be a missionary for eye safety in the plant. Without the Wise Owl Club the man who escaped an eye injury through the careful use of his safety goggles might never have received recognition. Now he becomes an example and is acclaimed for his good sense. This is the psychological strength of the Wise Owl Club idea.

By now many had heard of the Wise Owl Club and were clamoring for it. Insurance companies wanted to develop it. Makers of badges wanted to take out patents on the design. But top management of ACF wanted to make sure that Joe Folks' idea was not commercialized. So finally all rights to the Wise Owl Club were transferred to the National Society for the Prevention of Blindness, a non-profit private agency which for the past 40 years has been working for the conservation of vision. Now, under the sponsorship of NSPB, the Gold Owl with the flashing green goggles has come to the National Safety Congress in Chicago.

The executive director of the National Society for the Prevention of Blindness, Franklin M. Foote, M.D., has said: "Any industrial organization where there is any eye hazard to the workers may now without cost sponsor a Wise Owl Club by registering with NSPB. Then, on receipt of an authenticated report from the organization as to the saving of an eye by the use of safety goggles our society will provide, at cost, a Gold Wise Owl badge and a certificate of membership for formal presentation ceremonies. Presentation may be made by a management official or by some distinguished visitor, at a ceremony within the plant or at a public ceremony. However, the most important consideration is that the rules as to eligibility for membership be strictly enforced."

It is a known fact that some persons are less affected on exposure than others. This is explained by the efficacy of the individual respiratory system as a filter and the depth of breathing, both of which are probably the most important personal factors. Neither sex nor race has any bearing on a person acquiring silicosis.

It has been strongly recommended that should an employee engaged in an industry in which free silica is present in concentrations of two million or more particles per cubic foot contract open tuberculosis that such person be immediately removed from contact with other personnel. (Open tuberculosis is defined as where an infected person coughs up tubercular bacteria, thus endangering the other employees due to the predisposition and susceptibility of such personnel to tuberculosis.)

Diagnosis of Silicosis

Some of the signs and symptoms of silicosis are shortness of breath, particularly upon exertion; cough, usually dry; and chest pains varying from a feeling of general tightness in the chest to the sharp pains of pleurisy. However, a proper clinical and X-ray examination of persons suspected of having silicosis is necessary to diagnose the disease. The diagnosis must be confirmed by an occupational history of prolonged exposure to siliceous dusts.

Governmental Controls

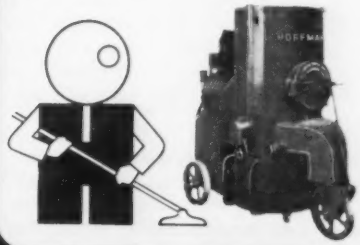
Strong governmental control measures have been effected in many countries including South Africa, the United States and Canada for the control of this costly industrial disease. Special mobile X-ray units manned by skilled technical personnel, make periodic examinations of industrial workers in siliceous industries, to detect early signs of lung dust affections or tuberculosis. This service is usually charged at cost and paid for by management, as a protective health measure for their employees. Should an X-ray film show an abnormal condition to exist, such affected person may be recalled at frequent intervals if necessary for further examination. This service is usually performed by the provincial health departments.

Some authorities state that simple silicosis, though verified by X-ray, is not necessarily harmful, and the breathing does not become impaired. The affected person may often go on working until retired due to

PREFERRED BY THE "BLUE CHIPS"
FOR HEAVY-DUTY SERVICE AGAINST DUST HAZARDS

A proud list of American industry's finest companies has found dust safety with Hoffman heavy-duty vacuum cleaning systems. Sturdy, powerful Hoffman portables — and field-engineered stationary systems — have helped these "blue chips" companies to *save*. Hoffman vacuum cleaning permits gradual and systematic elimination of fire, explosion and health hazards due to dust — and safeguards the quality of finished products. Names of typical users in your industry available on request. Write today — literature and a FREE engineering survey, without obligation.

HOFFMAN
VACUUM CLEANING SYSTEMS



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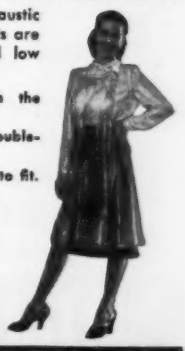


THE MILBURN CO.
3202 E. WOODBRIDGE · DETROIT 7, MICH.

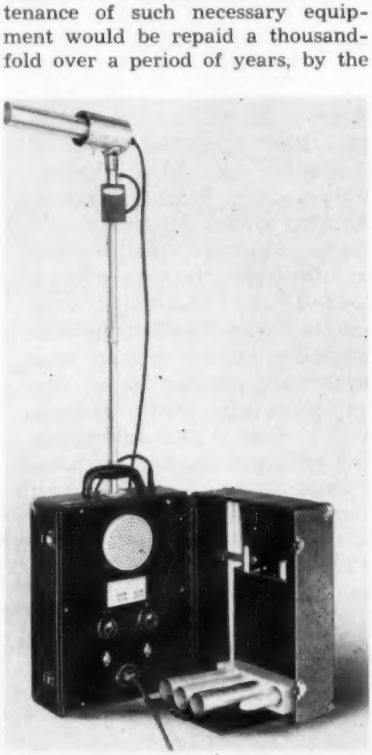
old age, suffering no great impairment in efficiency. Yet this same person, should he acquire tuberculosis, will invariably become incapacitated and necessarily must cease working in the causative industry.

Claim for Compensation

To establish a claim for compensation a person must appear before a silicosis referee board, usually made up of members of the provincial health departments. He must furnish proof that he has been employed in the causative industry for not less than 2 years. He must also furnish proof that his productivity and earning power have become impaired by at least 25 per cent. Signs and symptoms of silicosis alone are not accepted as proof that a person has the disease; for heart conditions and other factors often simulate silicotic symptoms.

Canadian Industries Safe?

It is regrettable that there are still a few industries in Canada, not the small ones by any means, which fail to safeguard the health of their employees by suitable preventive measures. They little realize that the initial cost of installation and maintenance of such necessary equipment would be repaid a thousandfold over a period of years, by the increased efficiency of their employees. The author strongly recommends federal legislation be passed empowering all provincial health departments with the right to take dust-counts and enforce corrective measures, in any industry suspected of unsafe working conditions.



This dust and fume sampler was designed for quantitative work, and employs the principle of pre-ionization with electrostatic precipitation. It may be used to test atmosphere or from ducts.

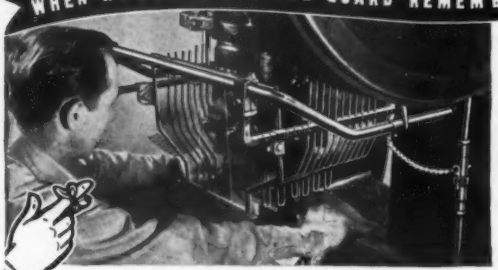
Ontario's Treatment Of Problem

It is interesting to note the progress of the Province of Ontario in her treatment of the silicosis problem. Now any person, regardless of how many years have elapsed since leaving the causative industry, may file claim for compensation if he or she has silicosis and can prove a past history of exposure, even though not now employed at that particular industry.

This is of particular interest in light of recent discussion on the St. Remi issue, in the Province of Quebec. (*Macleans Magazine*, July 1, 1948.)

No person may be employed in Ontario mines without pre-employment medical and X-ray examination, and must hold a card issued by the Workmen's Compensation Board of Ontario giving him physical clearance. It certifies that he has been X-rayed and is in fit condition to work in a mine. This card must be renewed periodically otherwise the man is not permitted to

WHEN HE FORGETS... THE GUARD REMEMBERS!



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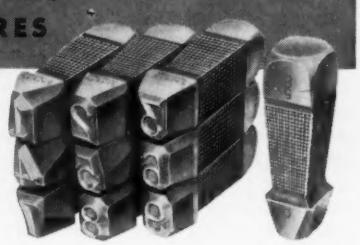

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Write for Bulletin J-547

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work. Such pre-employment medical and X-ray centres are operated for the mining country by the Workmen's Compensation Board of Ontario and are located at Sudbury, Kirkland Lake, Timmins and Fort William.

Leaning Backwards

All claims for silicosis, when received by the Compensation Board, are passed along to the Silicosis Referee Board for judgment. In conjunction with past history of exposure, X-ray films, and present physical condition, a decision is reached as to the compensability of the claimant. Should the verdict be unfavorable the claimant may appeal the decision. In this connection the author has been advised that it is the general policy of the Workmen's Compensation Board "to lean backwards" if there is any question of doubt of a man's eligibility for a claim, providing he shows a history of exposure of two years or more at the causative industry.

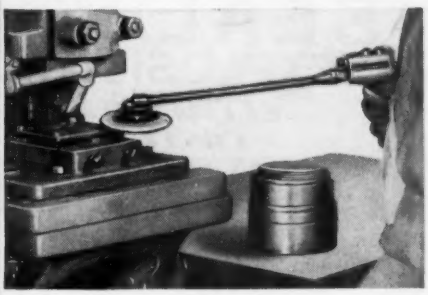
Make Operation safe

Authorities stress the fact that it is far better, if at all possible, to make the operation safe rather than just the operator. In other words, it is preferable to install suitable exhaust equipment to remove dangerous dusts and fumes from the site of the actual operation, thus safe-guarding the employee. Failing the feasibility or advisability of installation of suitable exhaust equipment, then respirators approved by the U.S. Bureau of Mines, for the specific job or purpose are recommended.

Complete respiratory protection is claimed for forty-five minutes in highly toxic atmospheres with this apparatus.

Respirators in general should be only used as a stop-gap until better control measures can be put into effect. A respirator to be effective must have a large filter area, proper exhalation valves, and a filtering medium suitable for the specific job in hand. Above all the respirator must be comfortable when worn by the employee, for otherwise in hot and clammy weather he will simply not wear "the darn thing".

The larger filter area permits the wearer to fill his lungs readily and with ease. This factor is of great importance, since to acquire a similar intake with a respirator having a small filter area will require greater inspiratory effort. The result is readily obvious, clogging will soon result and before long "Jim's" respirator will be slung around his neck, as he breathes deeply and freely of dangerous dusts and fumes. Management invariably excuse themselves by saying, "He has a respirator, if he doesn't want to use it that is his business." This is basically wrong, for if it were a



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properly fitted unit one would hardly imagine a man deliberately risking his health for a whim.

Make Dust Counts

The impinger and electrostatic precipitator are two instruments generally used for the determination of dust concentrations; they collect dust continuously from a large volume of air, hence providing a sample representative of average conditions.

The impinger is a device by which air containing dust particles is drawn at a definite rate of flow at high velocity, through a small nozzle, so directed that the dust-laden air will strike the bottom of a glass container partly filled with liquid such as alcohol, water, or a mixture of the two. The drawing in of the dust-laden air at high velocity results in the dust particles being "wetted" and thus retained in the liquid. A sample of this liquid is then examined microscopically and a dust count made.

An electrostatic precipitator is an instrument by which dust-laden air is drawn at a definite rate of flow, through a high voltage electrical field so arranged as to cause the removal and deposit of dust in a sampling tube. The dust so collected may be determined by a microscopic count or by weight.

There are numerous mechanical filter respirators on the market designed and approved by the U.S. Bureau of Mines, for protection from dusts, mists and fumes; each specifically designed for a special type of work.

This is a portable dust sampler, the impinger, which has been designed for use in isolated locations or confined spaces where electric current is absent.

Free Services

If at a loss as to what type of respirator is required on a job, or if unsure as to whether the air in a particular industry is safe, the plant engineer has but to contact the Industrial Accident Prevention Associations, the provincial health departments, or any of the equipment manufacturers specializing in the field. Let us help this fight to control and eradicate costly industrial disease and ensure a greater national economy, better health and better living!

(Photos courtesy of Mine Safety Appliances of Canada.)

This article is published in Occupational Hazards through the courtesy of its author, Mr. Hutner and the Canadian magazine, MANUFACTURING AND INDUSTRIAL ENGINEERING.

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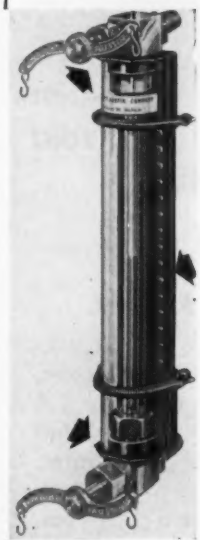

Kleervu Safety Gauge Glass Protector is positive assurance against the sharp slivers of flying broken gauge glass, which can blind, disfigure or possibly kill one of your employees.

The new Kleervu Protector fits right up against the gauge at top and bottom. Each end is sealed using a lip, which keeps any gases or like substances from spraying out. Also the frame back is enclosed with louvres which directs any escaping gases toward the ground.

Adaptable for the Chemical and Refinery Industries, especially for propane tanks.

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Suitable for Gauges from 4 inches to 8 ft. long, and will fit any gauge upon which the nut does not exceed 1⅞ inches across the hex.

Price $7.50 first 10 inches. Twenty-five cents for each additional inch. Quantity prices on request.

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Useful Literature

UL-25 . . . The Truscon Laboratories now have available a complete "Eye Comfort Color Harmony" brochure. This brochure describes how color harmony creates good seeing conditions and pleasant working environments. These factors encourage workmen to greater production efforts; fewer accidents result; there is less absenteeism and better employee-management relationships develop. The brochure shows actual colors and their proper adaptations.

UL-26 . . . A large, 64 page, multicolored booklet has been prepared by Stonehouse Signs, Inc. to present their complete line of Stonehouse Signs for Accident Prevention. The control of hazards is a vital part of every safety program. These Stonehouse accident prevention signs warn, educate and impress upon workers the importance of thinking and acting safely.

UL-27 . . . The Stephenson Corp. have recently published a folder describing their simple, portable apparatus for the measurement of intoxication by the analysis of the breath. Popularly known as the "Drunkometer", this apparatus is designed to accurately, rapidly and scientifically determine whether a person is under the influence of alcoholic liquor.

UL-28 . . . The latest designs in Ilg's super-cooled motor propeller fans are headlined in a new catalog just released by Ilg Electric Ventilating Co. Three types of modern styled propeller fans are featured in the new catalog in a range of sizes and capacities to handle various industrial requirements.

UL-29 . . . American Optical Co. have recently published a pamphlet describing and illustrating their complete line of steel-reinforced gloves, mits and hand pads, designed to protect hands on the roughest jobs.

UL-30 . . . Dockson Corporation's Catalog No. S-49 is a profusely illustrated 48 page presentation of their complete line of head and eye protection equipment. The catalog is dedicated to the convenience of all safety engineers. Included is an impressive array of head and eye protection devices.

UL-31 . . . Two new catalogs, No. 480 and No. 481 are announced by Schmieg Industries, engineers and manufacturers of plant equipment. Catalog No. 480 describes Schmieg's Centri-Merge Spray Booths for the elimination of paint over-spray with photographs and blue-print reproductions of typical plant installations. Catalog No. 481 offers comprehensive information concerning equipment manufactured by Schmieg, including dust and fume control units, spray booths, mechanical washers, industrial ovens and sheet metal equipment and accessories. Tables of technical information for plant managers and engineers are included.

UL-32 . . . The Skybrite Company have published an informative folder on Skybrite Crystals for cleaning glass reflectors and factory windows. The crystals dissolve readily and solution is made when, where and in quantity needed.

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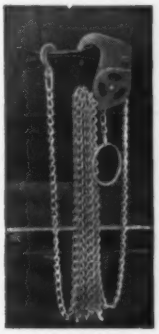

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GOGGLE INVENTOR HONORED

"Contribute something for the betterment of humanity and you will achieve true happiness in life," W. G. King, 88-year-old inventor of the modern industrial safety goggle, declared at a dinner held by his associates to commemorate his 67 years in the optical industry and the development of the safety goggle which has saved countless eyes from injury or blindness.

A pioneer in the industrial safety movement, Mr. King described how he conceived in 1906 the idea of a safety goggle capable of protecting eyes against flying objects.

"I had observed," he said, "that many thousands of artificial eyes were being sold in important industrial centers. Upon investigation I discovered they were primarily intended for industrial workers who had lost eyes in accidents.

"Appalled by the suffering and economic loss, I developed in cooperation with American Optical engineers an industrial type of safety goggle fitted with lenses made from thick plate glass. Crude as this first goggle was, it saved in a month's time 20 eyes of workers employed by the American Steel Foundries which had requisitioned six dozen pairs of the new goggles for a trial test.

"This saving of eyes proved conclusively the need and effectiveness of safety goggles in industry and decided my course in life. From then on I concentrated on promoting industrial eye safety and the results over the years represent my contribution on behalf of humanity."

Born 1860 in Warren, Ohio, Mr. King, in 1881, joined the Julius King Optical Company, a firm founded by his father in Cleveland and later moved to New York. Beginning as a salesman, he was elected vice-president in 1892 and president in 1913.

A leading distributor of American Optical Company products for many years, the Julius King Company, in 1923, was merged with AO when the latter company aligned itself with a group of wholesale optical houses to establish a nation-wide manufacturing-distributing organization. Since that time Mr. King has been employed by American Optical Company as its director of safety.

In 1916 the American Museum of Safety awarded him the coveted Louis Livingston Seaman Gold Medal for his eye-protection devices and in 1926 he was elected president of the National Safety Council. Photograph shows Mr. King being congratulated by C. H. Gallaway, A.O. official.

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for removing metallic particles, dirt, chips, any foreign matter from the eye. **$2.50**

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and our best wishes for
your health and happiness
in the coming year

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